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OUR SURPLUS FACTORY CAPACITY.

THE rubber industry, like so many others in the United States, has reached a productive capacity greatly in excess of the home demand for goods. But instead of regarding this as an occasion for uneasiness, manufacturers should consider how far it may be turned to good account. Formerly the height of their ambition was to supply the home consumption, to the exclusion of foreign goods. Having succeeded in this beyond all calculations, it would seem more consistent with the spirit of enterprise which has actuated them heretofore to look about for additional markets than to stop and complain because our own people cannot or will not buy all the goods that can be turned out. Doubtless in some lines factories have been multiplied to an unwise extent, but, as a general principle, a great manufacturing capacity should be a special cause for national pride. With agriculture alone as the basis we could never rank high as a commercial power.

If our manufactures have displaced the products of European labor in our own markets it is plain that it has been because of their superiority or their cheapness, or both. In some cases the domestic product has had an advantage from being better suited to the particular tastes of the people, which is an evidence of the adaptability of our manufacturers to special conditions. If the millions of Americans have found American manufactures better or cheaper or more readily adapted to their wants than the products of England or the continent, why should not the people of many other countries also become buyers of our goods for like reasons? By far the greater number of people in the world live in countries without machinery or skilled labor, and devote their energies chiefly to acquiring the products of the manufacturing countries. This immense field is as open to America as to Europe, and there are buyers enough, if the goods were only carried to them, to keep busy all the factories on both sides of the Atlantic.

Some of our bicycle makers, for example, talk as if the bottom would drop out of their industry if the factory capacity should ever exceed the home demand. But Germany is already exporting bicycles "in large numbers to Italy, Austria-Hungary, Russia, and Scandinavia, as well as to India and Japan." When the export of English bicycles to the United States fell off were any factories closed in consequence? On the contrary, new markets were looked for and found, so that the bicycle-export trade has increased every year. In both the countries named the question is not the buying capacity at home, but the buying capacity of the world, and this ought to be the narrowest limit recognized by a really great manufacturing country.

But the sale of goods abroad is not to be accomplished without special effort, having regard to special conditions in different countries, involving practically a new commercial education even for those who have been most successful in the home trade. Not a few Americans have failed in their efforts to build up a foreign business, and

there is one point about which probably more trouble has arisen than about any other. It is thus referred to by Consul-General Mason, writing from Frankfort o/Main :

The American system of cash payments on shipments of goods or drafts drawn against bills of lading is, of course, clean and safe and works admirably for interstate commerce, but it loses millions of trade when enforced with foreigners who are accustomed in legitimate business dealings to payments thirty or sixty days from date of invoice. German exporters readily grant such terms to foreign buyers, and, as importers, they naturally expect a similar concession to their established business rules.

Every American exporter feels the necessity of being on his guard in the matter of extending credit to foreigners, just as he would to an unknown buyer in his own country, and it has occurred to us that an enterprise in which the whole American manufacturing and exporting interest might unite, as a first step toward a greater expansion of our foreign trade, would be the organization of a system of credit-ratings for commercial houses in leading foreign countries, similar in character to the reports upon firms in the United States for use in this country.

THE DEMAND FOR BICYCLE-TIRES can hardly continue long to increase at the same rate as during the past year or two, and it will be a wise manufacturer who knows just where to limit his production or his capacity for producing tires. Some probably would be wiser not to make even a beginning. Doubtless rubber-tires will be in widespread use to the end of time, and there always will be somebody making them at a profit. But the history of the trade will be full of failures, just as has happened in the rubber-shoe business, with which the tire industry will be found to have some points in common. The manufacture of rubber shoes has been carried on for a half-century, the product being in wide and constantly-growing demand. Long ago there ceased to be any patents of a character to limit the business within few hands, and there are now practically no secrets of manufacture in connection with rubber footwear. Yet the factories making such goods in America can be counted on one's fingers, while similar conditions exist abroad. The explanation is that the number of manufacturers who can make rubber shoes and sell them at a profit is small, no matter how many may be able to make good shoes. We may expect to see the same thing true of tires—a heavier production year by year, in the hands of fewer and fewer concerns. Capitalists who are thinking of investing in the tire industry should consider that there is no reason for supposing that its history will differ from that of other great lines of manufacture.

THE LARGEST RUBBER CROP in the history of the Amazon trade was gathered during the season just closed, but this is no indication that the supply is becoming exhausted. On the contrary, new facts are constantly coming to light to point out a wider extent of the rubber forests than was formerly suspected. Every year, too, these forests become more accessible, either through new geographical discoveries, or by additions to transportation facilities. It probably will not be long before THE INDIA RUBBER WORLD will be in a position to outline an important undertaking intended to open up the richest rubber section in the world, now almost shut off from the markets by natural obstacles. Not only is the supply of rubber on this hemisphere practically inexhaustible, but the known African rubber field is constantly widening and being brought into closer touch with the markets. Altogether the situation is one which promises in future enough rubber for every industrial re-

quirement, at prices not prohibitive of its use for any of the purposes for which it is now employed.

THE LATEST REVOLUTION IN PERU appears to have been instigated by General Caceres, who is ambitious to regain the office of president, from which he was driven last year by General Pierola. No matter what the result, it can hardly fail to still farther unsettle the affairs of that unfortunate republic. As for the effect upon the India-rubber trade, the production of this commodity is likely to grow so long as the demand continues to increase, regardless of political conditions, though no doubt the development of rubber-gathering in Peru would advance more readily under a more stable government. At present the total output of rubber from that country forms too small a share of the world's production for the trade to be greatly concerned about Peruvian politics.

WE ARE NOT SURPRISED to find in the *India Rubber Journal* the statement that the value of rubber exported from Pará last year amounted to £46,363,000—equal roughly to \$231,815,000—with other figures no less preposterous. The article in which these appear, originally written for THE INDIA RUBBER WORLD, has been widely republished without credit. In some French journal our figures referring to weight in pounds were construed to mean so many pounds sterling, and our London contemporary has afforded a good illustration of its methods by taking in the article in its changed form without investigating its statements.

SIXTEEN TO ONE is a ratio which would be popular among rubber-manufacturers if it applied to pounds of crude gum and gold dollars. And if the American congress, by the way, can by mere fiat make sixteen ounces of silver worth as much as one ounce of gold, why should it not make a gold dollar worth as much as sixteen pounds of "fine Pará"?

COFFEE AND RUBBER AT CHIAPAS.

A LONZO REOSTA, a wealthy merchant of Tapachula, in the state of Chiapas, Mexico, below the peninsula of Lower California some 500 miles, was a recent visitor to the United States, says the *San Francisco Call*.

Mr. Reosta is engaged both in merchandizing and coffee-growing. Chiapas is one of the small but very productive states of the southern republic. Mr. Reosta considers it a great place for money-making. "The worst feature of life there is the difficulty of getting good servants. The natives are very indolent and inattentive. However, labor is not high there. For the Indian help of the coffee plantations we pay from 37 to 50 cents a day in silver. Chiapas will produce this year about 50,000 quintals of coffee, 2000 of cocoa and 1000 of India-rubber, besides very large quantities of all kinds of tropical fruits. The rubber industry is comparatively new. It is destined to be very important. There are a few Americans there, but the foreign population is mostly German. The goods consumed are to a large extent brought from Europe and this country. If a man goes there with money he can do well. Of course the more he can take the more he can do when he gets there. The little state of Chiapas has 29,000 people, while the town that I do business in, Tapachula, has only 1300."

HOAX.—Does Sillicus know anything about music?
Joax.—No; he doesn't know the difference between a string orchestra and a rubber band.—*Philadelphia Record*.

RUBBER FACTORY MUTUAL FIRE INSURANCE.

THE question of factory mutual fire insurance is one that concerns every manufacturer and none more vitally than the rubber manufacturer. The Rubber Manufacturers Mutual Insurance was founded in 1885 and during the eleven years of its existence has been phenomenally successful. The risks in the rubber trade embrace some sixty of the largest factories, boots and shoes taking the lead, with mechanical rubber goods as a close second. There are also in this company manufacturers of mackintoshes, carriage cloth, sundries and hard rubber. The majority of the factories insured are in the New England States, but the company also has rubber risks in New York, Ohio, Illinois and other states. Mr. B. F. Taft, the Vice-President of the Rubber Manufacturers Mutual Insurance Co., who is a veteran in factory and industrial insurance, has given to THE INDIA RUBBER WORLD the following financial statement brought up to June 1st, 1896:

Amount at risk.....	\$26,854,656.00
ASSETS.	
Cash, office, bank, and in collection.....	\$ 41,557.91
Bonds and stock.....	123,800.00
Corporation notes.....	95,325.80
Gross cash.....	\$ 260,683.71
Deduct liabilities.....	5,212.22
Net cash.....	\$ 255,471.49
Contingent premiums.....	1,298,113.60
Total assets.....	\$1,553,585.09
Last rate of dividend in cash, 70 per cent.	

Total amount of dividends paid in cash since the organization of this company, \$668,734 79.

The officers of this company number many of the most prominent rubber manufacturers of the United States. They are E. S. Converse, President; B. F. Taft, Vice-President, Secretary and Treasurer; Benjamin Taft, Assistant Secretary and Treasurer; the board of directors being E. S. Converse, Henry C. Morse, Joseph Banigan, Wheeler Cable, George H. Hood, O. H. Sampson, Henry L. Hotchkiss, E. B. Page, James Bennett Forsyth, B. F. Taft, Robert Batcheller, George F. Hodgman, Marcus Beebe, Benjamin Taft, Arthur W. Clapp. In the Industrial Mutual Insurance Co., and the Cotton and Woolen Manufacturers Mutual Insurance Co., both of which are prosperous companies operated from the same offices and organized by Mr. Taft, are found in the board of directors Henry C. Morse, Harry E. Converse, Lester Leland, Charles L. Johnson, and John J. Banigan.

It is interesting in this connection to briefly review the business of mutual insurance, and for that reason a few quotations from a paper recently read in New York by Samuel Kurtz, the secretary of the Tanners' Mutual Fire Insurance Co., of Pennsylvania, will be in order:

You and many others controlling the industries of the country may be rather prejudiced against mutual insurance, losing sight of the fact that if you insure at all it must be mutual. Whether you believe it or not, this is the

fact. The money paid into any company, whether mutual or stock company, is the only fund against which you can draw for indemnity in case of loss. If you draw upon the capital of a stock company its solvency is impaired to that extent. This capital of a stock company is a sort of a guarantee that its policies will be paid in case of loss, and usually costs the assured 10 per cent., just as the liability to assessment forms the guarantee in a mutual company and costs the assured nothing. In Massachusetts a statute makes each mutual policy liable to an assessment equal to five times the premium paid by the assured. In most of the States, including Pennsylvania, this is not the case, and we meet the case by incorporating the same conditions in the charter and by-laws of the company incorporated. Therefore, although we insure tanneries in 16 States, we do not legally do any business in any other States, and we have no agents, and we make no deposits and pay no taxes anywhere but in Pennsylvania.

The factory mutual system was started by Zackariah Allen, of Providence, R. I., 60 years ago. After having equipped his cotton mill with the best known apparatus for the prevention and control of fires, he required of the stock companies a corresponding reduction from the arbitrary rates demanded by stock companies. Then, as now, he was answered, "A cotton mill is a cotton mill; the rate is 2½ per cent." "Then," said Mr. Allen, "the cotton mills will insure themselves"; and the Manufacturers' Mutual Fire Insurance Company of Providence, R. I., were organized, after which all other factory mutuals were patterned, and brought to the highest standard of perfection by the Hon. Edward Atkinson, with "inspection, prevention, protection and positive indemnity" the motto.

The assured commits himself to no pitfalls or sharp practice, but is insured in blanket form up to 90 per cent. of the entire value of the plant, sometimes 100 per cent., the value being put on the property by the assured, and when loss occurs he is assisted in making out his loss and paid in full indemnity. Should any sharp practice prevail by the assured his policy is never renewed. Our object is to pay justly and not to avoid payment. The utmost confidence of all concerned is absolutely necessary to a successful conduct of the business. The whole system depends upon mutual good faith and confidence in each other. The integrity of each member is as essential an element as the quality of the risk; in fact, the moral hazard takes precedence.

About 60 per cent. of the insurable interest of the country is covered by the mutual system in factory mutuals, Lloyds, farmers' mutuals and mutuals who confine themselves to city dwelling risks, leaving about 40 per cent to stock companies. About the same percentage of each fail of success. The fact is, every branch of industry must serve an apprenticeship and follow proven lines or pay good money in bad debts, bad construction and failure in time.

Rates differ with the relative power of the associated stock or board rate companies. For instance, in Buffalo, the rate on detached buildings is 60 cents per \$100 for three years, while in New York, where the combine is less effective, the rate is 15 cents per \$100 for three years. On other business agents are subject to a heavy fine if they cut tariff rates.

Insurance should be purchaseable in any market, and the assured should judge of the stability of the insurance he buys, the same as he does of the purchaser of his wares.

In the factory mutual system each member is required to put into a fund enough money to assure him full indemnity in case of loss, as upon that depends its stability and its success. Ordinarily you put up your money on a game of chance as to whether a bad risk will burn or not, and look upon insurance as a necessary evil, and try to get it as cheap as you can. But you should endeavor to prevent loss by fire in a combination for your own protection. No one else can protect you. You have two alternatives: You can continue to waste your money as you do now, or spend your money judiciously and protect yourselves. In other words, you can combine your premiums in stock companies at an average cost of the premiums of 38 per cent. to 40 per cent. and take your chances on poor construction, bad protection and careless ownership, or combine your premiums at an expense of 10 per cent. and spend the profit for a few years in putting your property in such shape that the chances of fire are at a minimum. After the cost of protecting yourselves has been recovered you can then set aside a fund that the interest thereof will in ten years insure your property perpetually.

If the construction is frame, make it mill construction. That is to say, the timbers shall be of sufficient size to keep in place without serious deflection, never exceeding 25 feet span for the roof, sustained either by a sufficient number of posts or by well constructed trusses. A truss can be made of timber to cover a factory 72 feet wide in the clear at $\frac{1}{2}$ -inch rise to the foot. For the sake not only of stability, but for non-conduction of heat, put on the sides and roof 3-inch plank, grooved and splined, planed to uniform thickness and thoroughly seasoned. Support the roof with rafters, say 5 feet apart, and of sufficient dimensions to keep the roof firm and give it a pitch of $\frac{1}{2}$ inch to the foot. Avoid all open spaces in the sides or ceiling in which dust or refuse can collect. If finish is desired nail it solid to the roof and sides. Do not varnish. Use paint or whitewash. You will thus have a building of slow combustion; warm in winter, cool in summer. Let all fire doors and shutters next exposures be made of good pine, two or three thicknesses of matched boards nailed across each other either at right angles or at 45 degrees, the thickness being governed by the area; sheath doors and jambs with tin, the plates being locked at joints and securely nailed under the locking with nails at least 1 inch long. No air space must be permitted or the efficiency is destroyed.

Then introduce two sources of water supply. At all events, two force pumps, and connect the same with a sys-

tem of pipes, hydrants and stand pipes.* More fires are put out with buckets of water than by any other means. Therefore put as many buckets in your factory as you think you can use. Then put in as many pails and keep them full; then some more buckets and some more pails until you are sure you have enough. Chemical engines and some makes of fire extinguishers are useful. In attempting to use any kind of hand grenade much valuable time is lost. They are good for nothing.

Watchmen and latest improved watch clocks are indispensable. The damage from leakage in sprinkler heads is not very material. Of 200,000 sprinkler heads, covering a period of five years:

Number of cases of leakage where no accident occurred.....	22
No damage.....	16
Slight damage.....	6
Total.....	22
Number of accidents causing leakage.....	41
No damage.....	27
Small damage.....	14
Total.....	41

All open stairways should be closed and all elevators should be protected with automatic hatchways. Hose for inside, plain linen, best quality. Hose for outside, cotton, rubber lined.

Use gas or electricity for lights, but do not use the vapor of gasoline made by gas machines; it is more dangerous than gunpowder on your premises. Fixed kerosene oil lamps can be made comparatively safe.

Pure mineral oil is preferred for lubrication. It does not oxidize and is free from spontaneous combustion. All animal and vegetable oils are liable to spontaneous combustion, but they can be made safe by mixing from 35 per cent. to 75 per cent. mineral oil with them. For light bearings use pure mineral oil, fire test 300° F., which will evaporate less than 5 per cent. in 12 hours. Such as flash at less than 140° F. are dangerous. This oil does not oxidize or dry and is therefore absolutely free from the dangers of spontaneous combustion.

For heavy bearings use special products of petroleum such as valvoline, cylinder oil, etc., which are very heavy and free from the fatty acids of the animal greases which are liable to ruin engine cylinders. Steam pipes must be kept free from wood by placing behind the brackets a piece of asbestos at top and bottom, leaving an air space behind the bracket. It is our business to know that steam pipes will set fire to wood, and we do know it.

Experience has taught us that 80 per cent. of the incendiary fires are due to mice who carry oily waste into concealed spaces, and oil and grease produce spontaneous combustion. Out of 12 experiments made by confining rats in a cage into which matches were strewn as food 11 produced fire by the rats gnawing the phosphorous. Birds carried oily waste into the roof of a shed and under a July sun it ignited immediately over the head of a workman. It is your own fault if you do not remedy these matters.

* The Rubber Manufacturers Mutual insist upon a water service independent of the city service, no matter how good the latter may be. Automatic sprinklers are also required.—THE EDITOR.

THE INVENTION AND DEVELOPMENT OF THE MASTICATOR.

VERY few American rubber manufacturers have seen a genuine masticator, and fewer still employ one in their works. The machine is used for breaking down or milling crude rubber, and those who use it claim that its product has a finer, tougher grain than rubber broken down on friction rolls. The masticator was invented by Thomas Hancock, who was the Goodyear of England, and in this connection it is interesting to turn to his own description of the needs that spurred him on to invent it. He says:

Revolving in my mind the readiness with which newly cut surfaces would unite, I thought that a tearing action might do better than simply cutting. This could only be done by a machine, and I accordingly constructed a small experimental one, such as I thought most likely to effect the tearing of the rubber into small shreds. At the top of a hollow cylinder was an opening into which was put some hot rubber; when closed, the cylinder was put in motion by a winch. The rubber being now dragged in, and the motion continued, the teeth began to operate, and it soon became evident that some action was going on inside that I had not reckoned upon, as much greater power became necessary. After some time, the hole at the top of the hollow cylinder was opened, and to my great surprise, came out a round solid ball. This ball, when cut open, presented a marbled or grained appearance; the union of the pieces was complete; the graining exhibited the pieces curiously joined together, the exterior surface of them having been acted upon so as apparently to alter their condition, whilst the interior portion of the pieces seemed to be in the same condition as when put in. The ball was replaced and the action was continued for a long time, and when taken out again it had become very hot; and on cutting it open all the graining had disappeared; the whole had become a solid homogeneous mass. This operation was repeated until my experimental machine, constructed chiefly of wood, would no longer hold together, and I lost no time in applying to a firm of engineers, to make a proper working apparatus on the same principle. With my experimental machine I could not operate on more than about two ounces of rubber for a charge, and I found this quantity required nearly the power of one man to work it. I therefore calculated the capacity of my new machine for one pound, and, in order to enable one man still to act upon it, I had the speed reduced by one-half by spur-wheel gearing. I had it made very strong, as I found the charge might be increased to any amount that the space between the cylinders would admit, provided sufficient power was applied to give motion to the cylinder. Experience taught me afterwards that, with a smaller charge and increased speed, I could produce the same effect; in other words the result depended entirely upon the amount of motive power employed, and whether fast or slow.

Whilst this machine was being made, I reflected on the effect produced on the rubber by this singular operation. I observed that if the rubber was put into the machine hot and dry, the effect was only thereby hastened a little; for, if put in cold, it soon became heated; nor was it of much importance whether the pieces of rubber were larger or smaller, so that they were dry. The pieces soon began to unite, and presently all were worked up into a rough uncouth shape; but by continuing the action, the roughness and deformity gradually disappeared,

until at length the mass assumed a regular spherical form, the exterior merely showing the indentations made by the teeth.

I deduced from these facts that the union and consolidation of scraps, cuttings, bottles, shoes, or lumps of rubber, promiscuously thrown into this machine, was due to the combined action of heat and motion under severe pressure; when a heavy charge is operated on, the heat it acquires is very surprising. I have since found, on cutting a heavy charge open, and closing it upon the bulb of a thermometer, that the temperature reached 280° Fahr., and this heat could only be due to the motion of the machine and the action of the rubber upon itself during the transition state, as the same resulting temperature was attained when the rubber was put in cold and the machine also cold.

My new machine was at length delivered, and I found my calculation correct; a man could just manage to keep up the action of the cylinder with a pound charge of rubber in it. The machine wrought the charge into a cylindrical form, which it assumed in a very short time, and then evidently revolved upon its own axis around the solid cylinder: the charge came out, I think, about seven inches long, and one inch and a quarter in diameter. I had now at command the means of reducing all kinds of rubber, whatever size or form the original pieces might be, to a solid mass, without any foreign admixture, or the use of any solvent, or having recourse to any chemical process, the effect being produced solely by a mechanical action on the rubber itself disturbing the original structure of the substance and recomposing it, without materially altering its peculiar qualities or unfitting it for any of the purposes to which it could be applied in its naturally constituted state.

I wish here to remark that the discovery of this process was unquestionably the origin and commencement of the India-rubber manufacture, properly so called: nothing that had been done before had amounted to a manufacture of this substance, but consisted merely in experimental attempts to dissolve it; and even this had never been effected for any useful purposes. These experiments and the results produced occurred during the summer of 1820.

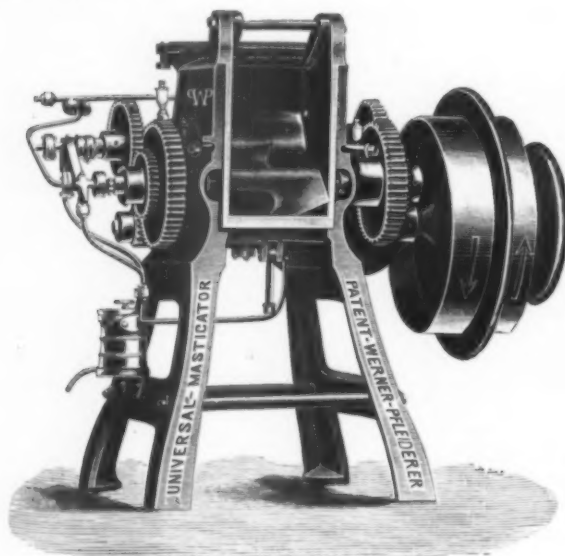
In the place I then occupied I could only employ manual labor; my second new machine was calculated for the power of two men, and by uniting four charges of this machine I obtained blocks of considerable size; but the demand increasing, I found it necessary in the following year, 1821, to move into larger premises in Goswell Mews, Goswell road, London. Here I had a horse-mill put up, and connected the power not only to larger machines, but also to iron rollers, which I now found very useful; as, by passing the raw rubber through them several times when hot, it formed itself into a kind of rough, corrugated sheet, which not only brought it into a good state of preparation for the machine, but greatly facilitated the drying,—a process which became more and more necessary, as I made purchases of newly-imported rubber, and therefore frequently in a moist state.

I think my blocks now amounted to fourteen or fifteen pounds each, and all the operations could be carried through with certainty and despatch. I must not omit to state here that, all through these operations, heat was indispensable; and, when it became necessary (as it soon did) to hasten the production, it was found of great advantage to expose the rubber before it entered the machine to as high a temperature as could be safely adopted. I have no doubt it was sometimes

as high as 300°. This mode of heating was followed until, in 1822, I began to heat the rubber in metal vessels surrounded by high-pressure steam. During the process of mastication I sometimes introduced coloring matters: they combined perfectly with the rubber: the colors were not very good, as the dark color of the rubber injured them.

As I took no patent for my process, it was, of course, an object with me to keep it secret. I pledged my men to this and treated them well; and they in return kept faith with me, and, in order to disguise the matter as much as possible, the machine was called "a pickle," and retained the name long after the secret became public: it has since been called a masticator or masticating machine. Whilst on this subject, I may just mention that I kept this process perfectly secret for twelve or thirteen years, that is, till about the year 1832.

I believe that no alteration has been made in the principle of the construction or use of the masticator, except the omission of teeth in the hollow cylinder, as it was soon found that the mass would revolve without them. Of course, the dimensions have, step by step, undergone great changes. The first charge ever produced did not exceed two ounces; and the masticators now in use at our works in Manchester are charged with from 180 to 200 pounds each; and the blocks resulting, without joining, are six feet long, twelve or thirteen inches wide, and about seven inches thick.



The illustration shows the most modern type of the machine that the great English rubber-man designed so many years ago. It is extensively used in the India-rubber and Gutta-percha industries throughout Europe. It is a very powerful machine, and opens in front instead of tilting, this arrangement greatly facilitating the discharge of tough masses.

The mixing trough is formed by two half cylinders placed side by side, forming a cutting edge at the meeting point, the outer walls extending upwards and with the sides forming a hopper over the cylinders in which the agitators revolve, both sweeping the sides and bottom of the machine preventing the mass from sticking.

By means of a friction clutch the agitators are moved forward, backward or stopped. The forward motion

brings the mass together in the center of the machine and separates it again on the cutting edge without cutting the grain, thus continually pressing, folding and stretching the mass. Since one of the agitators goes faster than the other, it will be seen that the mass is joined and divided at a different point each revolution, thus accomplishing the most thorough conceivable masticating in a very short time. Running the blades from each other separates and distributes the mass.

The mixing trough and agitators are heated by steam under pressure, only two connections being necessary, namely steam inlet and exhaust pipe. When cooling is desired, cold water can be applied through the same fittings, thus giving the widest possible range of temperature. The masticator here shown is built by the large European machinery house of Werner & Pfleiderer, the cut being furnished us by their American agent, Mr. H. Pistorius, Saginaw, Mich.

RUBBER SHOES FOR THE INDIANS.

UNDER the terms of the recent advertisement by the United States government for Indian supplies the contract for India-rubber boots and shoes was awarded to the Union Rubber Works Co., the bids having been opened on May 19 at the warehouse for Indian supplies, Nos. 77-79 Wooster street, New York. The details of the contract follow:

645 pairs men's rubber boots, Nos. 7-11, at \$2.55.....	\$1644.75
2220 pairs boys' arctics, Nos. 1-6, at \$1.02.....	2264.40
1150 pairs misses' arctics, Nos. 11-2, at 77 cents.....	885.50
1775 pairs women's arctics, Nos. 3-8, at 98 cents.....	1739.50
1335 pairs men's arctics, Nos. 7-11, at \$1.28.....	1708.80
776 pairs boys' overshoes, Nos. 1-6, at 47 cents.....	364.72
410 pairs misses' overshoes, Nos. 11-2, at 30 cents.....	123.00
1175 pairs women's overshoes, Nos. 3-8, at 38 cents.....	446.50
450 pairs men's overshoes, Nos. 7-11, at 60 cents.....	270.00

Total..... \$9447.17

It is not specified whether these goods are to be in regular, opera, piccadilly, or needle toes, probably on the idea that it is a lucky Indian who gets any sort of rubber, and that the United States government has too much business on hand to be concerned about the fitting of rubbers on our copper-faced paupers. The Union Rubber Works Co. are the concern incorporated in West Virginia some three years ago to engage in the rubber-reclaiming business, but they are no longer actively interested in that field.

* * *

AN award for 4000 pairs of arctic overshoes, under the bids opened on June 8 at the Philadelphia depot of the United States quartermaster's department, has been made to Wallace, Elliott & Co. (New York), at \$2.24 per pair, or a total of \$8960.

The United States war department recently awarded, to dealers in Washington, D. C., contracts for rubber supplies for the quartermaster's department at Jeffersonville, Ind., including 840 gross of bands. These were classified into eighteen items, ranging from 4 $\frac{1}{2}$ cents to \$3.55 per gross, the whole amounting to \$241.23. The amount of figuring necessary in filing a bid of this kind would be sufficient to deter most people in the business for competing for the government's patronage.

MR. WM. H. SERVIS, secretary and manager of the Eastern Rubber Mfg. Co. of Trenton, is able to be at his place of business once more having nearly recovered from a badly fractured ankle which he received by falling from his wheel.

THE DIFFERENCE BETWEEN "ISLANDS" AND "UPRIVER" RUBBER.

A FEATURE of the India-rubber market in the United States is the growing tendency of manufacturers who use the Pará grades to buy only the islands rubber. Until within recent years quotations for fine Pará were made without reference to the source of the gum, but manufacturers have gradually exhibited a preference for the upriver sorts until practically none from the islands is now received at New York, according to a leading member of the importing trade. In Europe the same distinction is not so generally made, manufacturers being disposed seemingly to buy the rubber that they can get for the least money—so long as it will serve their purpose at all—relying upon cheap labor to clean it and the skill of their chemists to so compound it as to yield the best results, to an extent which American manufacturers, up to date, have not had the patience to undertake. Here the impression having gotten out that the upriver Pará rubber is superior to any other, the makers of fine goods insist upon having only the upriver rubber. The difference in price between the islands and upriver grades has gradually widened, and it is the opinion of the importer mentioned that it will continue to increase. The difference is much greater between the islands and upriver in coarse than in fine rubbers.*

In the beginning of the rubber industry in the United States, manufacturers were aware merely that Pará rubber was better than any other known. Their experience in working with various new rubbers brought to their notice from time to time was most discouraging, which made them, for awhile, adhere more closely to the use of Pará. At first they ordered Pará rubber without distinction as to sorts, gradually arriving at the present classification as between fine, medium, and coarse. At that time, however, the gathering of rubber in Brazil was confined to the district near Pará which to-day yields the islands rubber, the rubber-gatherers not then having explored every navigable affluent of the Amazon, as they have since done. In brief, there was not, in the days when Captain John Bertram sailed his ships from Salem, and when James Bishop was starting the rubber business at New Brunswick, and when Leverett Candee was beginning the importation of rubber at New Haven, any such distinction as "islands" and "upriver" in connection with Pará rubber.

From interviews with manufacturers it appears that their view of the matter is that upriver rubber is worth more than the islands rubber because of the lesser degree of shrinkage. The rubber from the headwaters of the Amazon, and especially that from Bolivia—which is discharged through the river Madeira, with innumerable detentions from cataracts—occupies more time in the transfer from the forest to the factory, and is consequently better dried when it arrives. Rubber sells for more, therefore, as it comes from points higher up the Amazon, and particularly that which comes down the Madeira, it being practically impossible for any of the Bolivian product to reach New York within less than three months, under the most favorable circumstances.

The price of rubber also depends upon the condition as to cleanliness in which it reaches the market, and some manufacturers insist that the islands rubber is apt to contain more foreign matter—dirt, sand, bark, and leaves—than the rubber from upstream, and this adds to the labor of manipulation at the factory, and consequently to the expense. Dirt in rubber, by the way, is more objectionable than water, since the latter will simply run out, while the former, by "working into" the rub-

ber, may not only give rise to much labor and trouble, but also injure the texture of the gum.† It is also the opinion of some in the trade that the upriver rubber is better cured. Again it is suggested that, as new fields are constantly being opened in the interior, with mature trees tapped for the first time, the flow from the trees is richer in caoutchouc than from the old and constantly worked forests on the islands in the lower part of the Amazon. But nobody in the trade seems prepared to assert that there is a working difference in the quality of the rubber from the islands and that from upstream—the only point being in the greater freedom of the latter from moisture and foreign solids.

One manufacturer, on the other hand, said that he believed the presence of dirt in the rubber to vary more with the seasons than on account of the districts from which the rubber comes. It does seem singular that better, or at least cleaner rubber should come from the newer districts than from the vicinity of Pará, where rubber has been gathered for export for the last seventy years. In answer to this point, it is observed that the gathering of rubber all over the Amazon valley is in the hands of the natives, who never improve in their work, and is beyond the control of the rubber merchants until it actually comes into their hands. There are more intelligent and more trustworthy tribes up the Amazon and on its branches than at the lower end of the river, and they make more satisfactory rubber-gatherers. According to the botanists, the two classes of rubber described in this article are yielded by different trees—the *Hevea Brasiliensis* on the islands, and the *Hevea discolor* further up the Amazon—but the trade in the United States does not consider this fact as marking a distinction between grades of rubber.

One very important reason why more upriver than islands rubber is bought by manufacturers is that the yield is greater. Only about one-third of the total export of rubber from Pará comes from the islands district. In the table below is the result of an attempt to analyze the Pará rubber yield of a recent year by districts, exact figures being given as far as the state of Pará is concerned, and round numbers being used for the other districts. The second column of figures has been gained by taking throughout 60 per cent. of the figures of the first column, a study of the Pará statistics for several years showing that 60 per cent. of the whole crop is sold as fine rubber. The figures refer to pounds:

SOURCES.	Total Rubber Crop.	Fine Rubber.
Islands.....	13,673,920	8,204,352
Cameta.....	2,035,250	1,221,150
Itaituba.....	1,012,699	607,619
Xingu.....	694,958	416,974
River Madeira.....	3,000,000	1,800,000
River Purus.....	6,000,000	3,600,000
River Jurus.....	4,000,000	2,400,000
River Javary.....	4,500,000	2,700,000
Rivers Negro, etc.....	2,000,000	1,200,000
Peru.....	2,000,000	1,200,000
Bolivia.....	2,000,000	1,200,000
Total.....	40,916,827	24,550,095

* In THE INDIA RUBBER WORLD for May, 1894, was published a very complete article on "The India-Rubber Trade as Conducted at Pará," giving details as to the districts which furnish respectively the islands and upriver rubbers.—THE EDITOR.

† In a published address last year Mr. Joseph Banigan asserted that of the so-called India-rubber imported by the United States in the preceding year, 9,793,344 pounds were "nothing but mud and water, and that mud and water cost \$5,396,000."

To sum up, fine upriver Pará, including Bolivian rubber, comes to market better dried than the rubber from the lower Amazon. For this reason it began some years ago to be sought for by manufacturers, who were willing to pay a slightly higher price for it. This fact was promptly noted by the rubber shippers at Pará and the importers here, and turned to their own advantage. From the constant mention of upriver rubber as the better rubber, by which it was meant originally that it brought more money, the impression has gradually gained ground that it is better rubber intrinsically. But probably no manufacturer is able to show any advantage in upriver rubber over islands sorts except with respect to better drying and consequent less shrinkage, and this is about covered by the difference in price. These considerations apply equally to the coarse Pará rubber, which is also sold at a higher price when it comes from upstream.

In this connection may be quoted the remarks made to the writer by a rubber broker, in reply to the question whether he ever attempted to introduce cheaper grades of rubber into the market as a satisfactory substitute in certain work for more expensive grades now in use. He said that he did not, and added:

"A manufacturer who starts out to make good tires, for ex-

ample, wants the best rubber he can get, and there is nothing else so good as fine Pará. There may be other grades of rubber that would give good results, but the money saving would not be great. By the time the cheaper rubber was cleaned and dried it might cost the manufacturer ten cents per pound less than Pará, or a saving of twenty cents in a pair of tires, supposing that two pounds of rubber were used. Most American manufacturers would consider this too small a saving to justify them in using any other than the best rubber for tires. It is not the business of the crude-rubber man to educate the manufacturer in the uses of the different grades, though without doubt there are brokers in the market who could save some manufacturers a handsome sum every year if they were commissioned to do all their buying—taking this grade when the price was particularly favorable and another but similar grade at another time, and so on. But manufacturers are slow to accept suggestions, and the brokers accept orders for whatever is asked for, provided the price is satisfactory and the desired grades are in the market. It would hardly be to the interest of a broker to recommend low-priced rubbers when he is asked for better grades. Nor would it be to his interest to encourage buyers who come to him to buy poor grades of rubber for the manufacture of such a delicate article as a pneumatic tire."

DENNIS C. GATELY AND HIS RUBBER INVENTIONS.

THE late Dennis C. Gately contributed in an important degree to the development of the India-rubber industry by his inventions. He entered the rubber business as superintendent of the Boston Belting Co. in April, 1846, remaining in that position until April 14, 1856, when the New York Belting and Packing Co. were organized, making him the superintendent of their works at Newtown, Conn. Here he remained for twenty-eight years, when he retired to the enjoyment of a ripe old age.

There were issued to Mr. Gately on November 22, 1859, two patents—No. 26,177 and No. 26,178, for "improvements in rubber belting"—which were of great value to the trade at the time and assisted in securing to his company and their licensees a practical monopoly of the rubber-belting trade for years.

A few years ago Mr. Gately thus explained his delay in applying for patents on improvements which had been developing through twelve years: "First, I could make no exclusive use of any invention, since the right to make vulcanized rubber belting, under the Goodyear patent, was already assigned to exclusive licensees. Secondly, the exclusive licensees were my employers, to whom I owed my time, my labor, and my inventive powers, to improve the manufacture which they had entrusted to me." Having obtained his patents, and considering the means afforded by the New York Belting and Packing Co. for making the improvements and patenting them, and his inability to make use of them on his own account, he felt that he could do no better than to assign to the company, and he did so assign to John H. Cheever as trustee. In 1873 the patents were reassigned to Mr. Gately, who obtained an extension of them for seven years from November 22. At that time he stated that he had received from the company a fixed annual salary and 3½ per cent. on the profits of the company, on which basis he estimated that the two patents had brought him, during fourteen years, \$12,250.

At a hearing before the commissioner of patents on the question of extending these patents, John H. Cheever was asked to state "what Mr. Gately has done toward the development of rubber belting," and his answer follows:

"The mode of vulcanizing rubber belting in 1846 was by hanging it up over poles in a room, and admitting the heat from a furnace under the floor to raise the heat sufficiently to cause vulcanization. This was a very imperfect mode, for the reason that one part of the belt would be more vulcanized than another part.

"The next step was the use of steam in boilers to raise the necessary heat, the belts being laid backwards and forwards on the bottom of the boiler; this I think was in 1848 or 1849. The difficulty in this process was that the belts came out of the vulcanizing process blistered, and otherwise imperfect.*

"The next step was rolling the belts in cloth, and then putting the belts so rolled up into the steam-vulcanizing boilers and then vulcanized. This was a very imperfect process, from the fact that the outside and edges of the belt were vulcanized, leaving the interior of the roll imperfectly vulcanized, so that it became hard when the weather was cold." [Besides, the canvas left an impress upon the belt which made it rough-surfaced.]

"The next attempt at an improvement was vulcanizing the belting with heat applied by means of steam-jackets to plates [the forerunner of the belt-press], the belt being confined between the plates, and there vulcanized. The objection to this process was the stretch was not taken out of the belt, so that when practically in use the machinery which was being driven by the belt had to be often stopped in order to shorten the belt. The process was, moreover, very slow and expensive. This was in practice in 1856; it might have been tried, perhaps, before on a small scale.

"The next improvement was the process described in these patents, now sought to be extended. This improvement began in the spring of the year 1857, and was continued until perfected and the patents obtained."

* This system really dates back to 1845, and when carefully handled produced good results. The belting was not laid on the "bottom of a boiler," but stretched on a carriage that ran into a fifty-foot vulcanizer. Where good rubber was used the results were first class. Indeed there are those to-day who still make a few belts each year by this process.

Under these patents the belts to be vulcanized were placed between thin sheets of flexible metal, of the same width as the belt, the whole being rolled as tightly as possible on a mandrel. When this was done a belt 200 or 300 feet in length was in a compact form, capable of being vulcanized in a small steam-boiler. The advantages were that with the belt tightly rolled it was impossible for air-bubbles to occur; that the pressure gave solidity to the whole belt; that the metal strips, being a good conductor, conveyed the heat evenly and thoroughly through the belt when rolled up; that the polished sheets of metal gave a perfectly smooth surface to the belt; that belts could be made of any desired length; and that shrinkage was obviated.

The extension of the Gately patents in 1873 met with an unusually vigorous opposition, in which the National Rubber Co. and several other manufacturers were involved, and which was

concentrated mainly upon the question of novelty of the invention at the time the patents were allowed. The fact was recalled that in the beginning Mr. Gately's applications for patents were placed in interference with the patent on rubber belting already granted to Spencer T. Parmelee, of Scotland, on April 26, 1859. But the then commissioner of patents declared the interference improper and dissolved it. The Parmelee patent in America, by the way, was purchased in 1859 by the New York Belting and Packing Co., but they never developed it.

Many other patents were issued to Dennis C. Gately, but only a partial list of them is now at hand. Some of them, which covered belts and methods of manufacturing them, were:

November 29, 1859, November 29, 1859, December 20, 1859, December 27, 1859, January 3, 1860, January 31, 1860, March 13, 1860, October 27, 1868, January 26, 1869, November 19, 1872, July 1, 1873, August 5, 1873 (in connection with J. B. Forsyth.)

THE DEMAND FOR BALATA AND THE SUPPLY.

IT is a singular thing that, although the merits of Balata as a substitute for Gutta-percha were brought to the attention of the trade forty years ago, its use should still be confined within narrow limits, and in few hands. This gum combines in some degree the elasticity of India-rubber with the ductility of Gutta-percha, freely softening and becoming plastic, and being easily molded like Gutta-percha. There is in Glasgow, Scotland, a firm who have been engaged for several years past in the manufacture of Balata belting, with the most satisfactory results. In certain legal proceedings brought by this firm recently to protect one of their patents, they testified that their outturn of belting made under this patent had amounted in a single year to practically \$500,000 in value. While their product is advertised as "Gutta-percha belting," it may be said that in Europe Balata is frequently classed as "Gutta-percha"—it is always so classed in the British customs reports—and the firm referred to are known to be large buyers of Balata. During the past year or two much attention has been devoted to the use of Balata by belting-manufacturers on the continent, with the result that this gum has come into good demand in Germany. There is also a manufacturer of Balata belting in or near Rotterdam. In the United States, where the use of Gutta-percha by the manufacturers of belting has never proved popular, the outcome of experiments in this field with Balata have not led to its adoption by any one in preference to India-rubber. But of late some entirely new uses for Balata have been found in this country. One of these is in the manufacture of dress-shields—an industry which might at first thought be deemed insignificant, but which amounts annually to an aggregate of several millions of dollars. Experiments have also been made with it in the manufacture of golf-balls, with results which so far, have proved satisfactory. A third use has been in the insulation of electric-lighting wires. On the whole, it is safe to say that the use of Balata is extending rather than diminishing.

The sources of supply of Balata, so far as now known, are not extensive. It is obtained in important quantities only from British and Dutch Guiana. The trees are known to exist in French Guiana, and THE INDIA RUBBER WORLD has reported recently the concessions granted to General Jean and others for the exploitation of the Balata industry in that colony, but no shipments on a commercial scale have been made, up to date, by the *cessionnaires*. The entire territory covered by the Guianas is limited, and the Balata-trees as a rule are thinly scattered through the forests, while all the conditions are such

as to render them inaccessible. Added to this are the sparseness of population and the generally unsatisfactory character of the labor available, so that the gathering of the gum is surrounded with difficulties and makes very slow progress. The gatherers must be sent into the forests several months before the product of their labor, under the most favorable circumstances, can be expected to reach the seaboard. If there should be too much rain, or too little rain, the gatherers may return empty-handed, entailing a loss upon the employer who has made advances of supplies for their subsistence. In French Guiana, which is a penal colony, the population is composed largely of convicts, whose value as laborers is not highly regarded by those engaged in the Balata trade elsewhere. British consular reports give the following information respecting the value of the Balata output:

	British Guiana.	Dutch Guiana.	Total.
In 1890.....	£10,079	£ 9,541	£19,620
In 1891.....	6,807	11,948	18,755
In 1892.....	11,296	15,085	26,381
In 1893.....	a 12,216	6,347	18,563

[a Estimated.]

For some of the years the weights have been given, thus: For Dutch Guiana, 210,674 pounds in 1891, 265,977 pounds in 1892, and 113,018 pounds in 1893; for British Guiana, 217,168 pounds in 1893. It is probable that the total output has not reached 500,000 pounds in any year. These facts alone are a sufficient reason why the consumption of Balata should continue to be on a limited scale. What would be the effect upon the production of Balata of a definite and growing demand for it can only be conjectured. Reference has been made above only to the comparatively small territory of the Guianas. But THE INDIA RUBBER WORLD is assured by Dr. A. Ernst, professor of botany in the University of Caracas, that throughout Venezuela there abound trees which yield a gum similar or superior to the Balata of commerce, and that their utilization is looked forward to as promising an important source of wealth. This opinion is shared by a French scientific gentleman who lately made an exploration of the Orinoco valley.

There is to-day no established quotation for Balata in New York. The gum which reaches this port is owned by an American company who, together with the Glasgow manufacturers above referred to, practically control the collection of Balata—one in British Guiana and the other in Dutch Guiana. Each of the firms is concerned first in the supplying of their own wants as manufacturers, in which capacity they are not

competitors. In the event of having a surplus on hand, either of the firms would give the other a preference over other buyers, as either might at any time be inconvenienced by a shortage.

"We are not prepared to quote a price on Balata," said the New York concern. "We should hardly be disposed to sell any in this country, and certainly not to a competitor in our line of manufacturing. We are not offering Balata for sale, though we have received within twenty-four hours four cables from Europe from would-be buyers."

Prices recently quoted in London were: Demerara rough sheet, 2s. 5½d.; inferior, 2s. 4d., rejections, 1s. 6d. The export price at Paramaribo during 1892 was 1s. 1.3.5d per pound, and during 1893 about 1s. 1½d. There are two seasons when the receipt of Balata is most active—the first being embraced principally in the month of May, and the second including September, October, and November.

THE TIRE CRAZE IN ENGLAND.

INTEREST in British financial circles in rubber-tire companies has been by no means confined to the big Dunlop deal, followed by the organization of a \$25,000,000 corporation, though this instance of success was the starting-point for what is most aptly called a "tire craze." Our London contemporary quotes a stock-exchange man as saying that, if the tire industry consumed all the India-rubber imported by the United Kingdom, there would not be enough rubber involved to make a dividend for the Dunlop Pneumatic Tyre Co., Limited, which would be a better point if tires were made wholly of India-rubber. The duck used in the manufacture of tires alone costs no small item, while the labor employed is more than ordinarily skilled, and must be paid for accordingly.

The Dunlop Pneumatic Tyre Co., Limited, now control about 200 patents, and naturally will make the most of the protection afforded by them, though Mr. Harvey du Cros is quoted as saying that the aim of the company is, by means of thorough organization and good management, to gain such a commanding position that they will continue to lead in the era of open competition. Their patents, by the way, are listed as representing an expenditure of \$301,946. The scope of the new company is not confined to making tires for bicycles and other vehicles, but rims as well. Indeed, the prospectus enumerates, among other objects, that of carrying on "the business of India-rubber manufacturers and makers of and dealers in articles of any description made or prepared of India-rubber." The papers in the application for registry for the new Dunlop company differ from those in ordinary cases in that, whereas the signatory shareholders usually put their names down for one or only a few shares each, in the present case Harvey du Cros and Arthur Philip du Cros head the paper with \$1,000,000 worth of shares each.

The following is from the *Illustrated London News*, though doubtless from a financially-inspired source: "A little while ago the Dunlop tire had 85 per cent. of the trade, the most formidable competitors being the "Clincher" and the Palmer. The syndicate that has given the £3,000,000 for the old company has paid another £1,000,000 for the "Clincher" and Palmer and other rights, and now, practically speaking, the Dunlop only is on the track. So enormous is the demand that to the Coventry works alone each week are sent the component parts for 25,000 tires to be made up for England. Actually in one week they have made up as many as 21,000 tires." The paragraph happens not to be correct with reference to the purchase of the Palmer tires by the Dunlop syndicate.

The latest report with regard to the Dunlop syndicate is that its interests on the Continent have been organized in a public company in Paris, with shares amounting to \$3,000,000.

London newspapers have been reaping a rich harvest from advertising new tire companies, among which is Scott's Standard Pneumatic Tyre Co., Limited, with \$1,250,000 capital, to sell the tires manufactured by Robert Scott. The advertisement reads, in part: "Robert Scott was among the early patentees of pneumatic tires, and his patents are now the property of the Dunlop Pneumatic Tyre Co., Limited, but under certain reservations in his agreement he retained the right to make tires in accordance with his patents, *free of any royalty*. By virtue of certain other arrangements a license was granted to Mr. Scott, enabling him to manufacture under certain other patents possessed by his licensors, under very favorable terms." They print a certificate from a chartered accountant that the Scott concern has in hand orders for 162,002 tires, and 21,000 tire-covers, on which the estimated profits will be \$319,800.

The £1 shares of the Grappler Tyre Co., Limited, have advanced to £4, while those of the Beeston Tyre Co., Limited, which could have been bought two years ago at 3½d. cannot now be bought for £8. At least at a recent public dinner to introduce to the members of the house of lords the merits of a horseless carriage promoted by Harry J. Lawson, chairman of the Beeston company, that gentleman intimated that they had refused an offer of £8 per share from the Dunlop interests.

The horseless carriage is also coming in for a share of attention, and the makers of tires are hoping for a new field for their industry in equipping these vehicles with rubber. The Mr. Lawson above mentioned has advertised an opportunity for the public to buy \$3,000,000 worth of shares in his Great Horseless Carriage Co., Limited, whose assets consist in part of seventy-five patents which have been secured or applied for.

DRESS-SHIELDS BY THE MILLION.

SEVERAL millions of dollars are spent every year by the women of the United States alone for rubber dress-shields, which is another proof of the commercial importance of small things, provided they are in general demand. The number of these articles annually manufactured in this country is estimated by one member of the trade at 30,000,000 pairs, but this is regarded as much too large by the manager of the largest firm in the business. The latter firm, by the way, is credited by a competitor with a production of 13,000,000 pairs. If this figure be correct, the total manufacture in the United States is probably something over 20,000,000 a year. The manufacturers' price averages in the neighborhood of 15 cents per pair, while consumers pay 25 cents or more. There are, however, goods in this line retailed at 9 cents per pair. The manufacture of these goods is not confined to the United States, there being a large production of them especially in France. They all contain India-rubber or Gutta-percha, though recently the manufacture of shields rendered moisture-proof with Balata has been begun on an important scale. As a good quality of gum must be used, it will be seen that the consumption of rubber in this field is by no means insignificant. Two very large and prosperous companies in the United States are devoted to the production of dress-shields alone, and several smaller concerns are doing an apparently good business in the same line.

The weekly exports of dress-shields from New York reach a considerable figure, showing that the European production is not equal to the demand across the sea. The average for several weeks lately has been \$2329 for Southampton, \$1204 for Hamburg, and somewhat smaller amounts for other ports.

NEW GOODS AND SPECIALTIES.

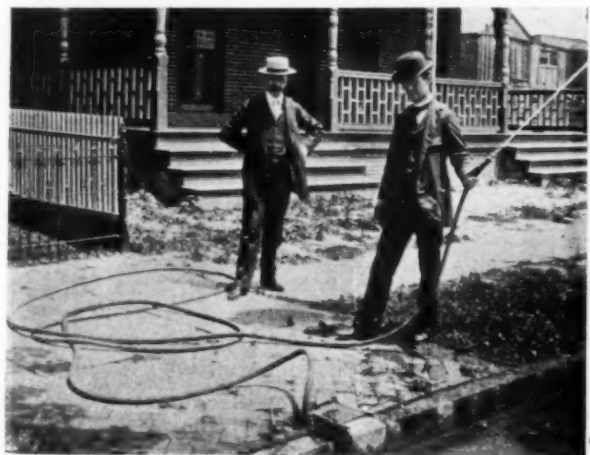
THE Dean No-puncture tire is of the hose-pipe pattern, and has between the fabrics a series of steel scales. These overlap each other and are riveted through a slot in such a manner as to allow them to move slightly when the tire is in motion. These scales are very small being but $\frac{3}{4}$ -inch wide and .006-inch thick, and add about 7 ounces to the weight of the tire. Aside from this the tires are made of the best Pará rubber, and the highest grade of Sea Island cotton fabric. The company manufacturing these sell them with a year's guarantee. Manufactured by the Dean Tire Co., 25 Warren street, New York.

THE KANT-KINK-IT.

A PLAN for preventing the hose from breaking at the end near the pave wash is shown in the accompanying illustrations. In this a brass spiral spring wire is imbedded in the rubber of



the end of the coupling. Manufacturers claim that by this method they do away with the need of an extra coupling. Certainly there is danger of hose kinking and breaking near the

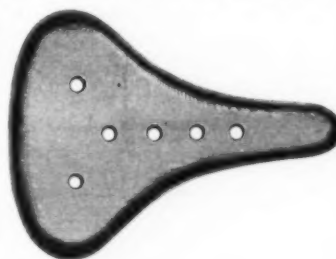


couplings and a number of expedients have been resorted to to overcome this. The Kant-Kink-It is manufactured by the Eastern Rubber Mfg. Co., Trenton, N. J.

A SPONGE RUBBER SADDLE.

ONE great fault with pneumatic saddles, aside from their liability to puncture, has been that they were very unevenly resilient. A new rubber saddle that is just springy enough to be comfortable, that is soft, easy-riding, and perfectly ventilated, is the Clifton, which is made of sponge rubber. It never flattens or gets out of shape, and conforms wonderfully to the motion of the rider's body.

The sponge rubber is covered with the finest of leather by skilled saddle makers. Manufactured by the Clifton Rubber Mfg. Co., 65 Franklin street, Boston, Mass.



THE BUNKER PNEUMATIC SADDLE.

THIS saddle of course is made of rubber, and in a number of different styles, one of which is shown in the illustration. The body portion is made of the best ooze calf skin, linen lined and secured between the supporting plate by an interior plate. The rubber case forms the air cushion, and is fitted with a valve of standard size so that the ordinary tire pumps can be used upon it. One form of the saddle is used transversely on the frame, and is said to give perfect freedom of knee action with no frustration of the development of the muscles. Another, that shown in the cut, has a projection in front and is made practically of three independent air-cushions, which are arranged about a common center. Still another is similar to the first but is used in a longitudinal position. Manufactured by the Bunker Saddle Co., 208 E. Lake street, Chicago.



THE CRAIG AUTOMATIC PNEUMATIC SADDLES.

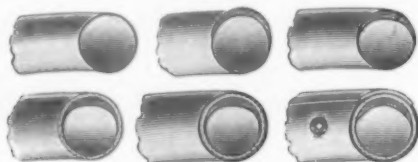
THE Craig saddle is composed of separate pneumatic cushions, one on each side of the longitudinal axis of the saddle. These two pneumatic chambers are connected, but the air communication is so restricted that it insures equal pressure on each side. It is impossible for the air to suddenly shift from one side to the other when the saddle is in use. The hole connecting the two separate portions is one thirty-second of an inch in diameter, which by experiment has been proved to be just right to enable the two sides to



adjust themselves to each other. These saddles are manufactured by the Craig Cycle Saddle Co., Lawrence, Mass.

THE SELF-HEALING PNEUMATIC TIRE.

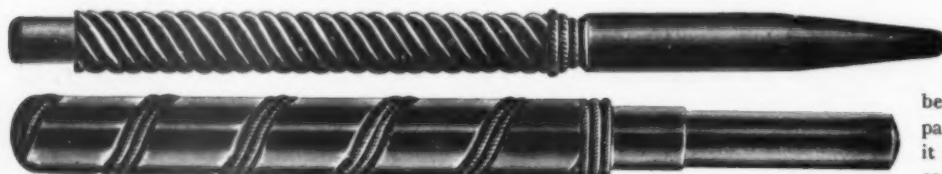
THE illustrations show exceedingly well the method of making what is known as the "Self-Healing Pneumatic Tire." First is a thin inner tube made of pure gum. Next to this, where comes the tread of the tire, is a thin tube of rubber filled with what is known as self-healing balm; which appears to be a soft unvulcanized rubber product so compounded that as



long as the air is kept away from it it remains in a viscous state. The third process is where both of these tubes are covered with a thin tube of pure rubber, while in the fourth both tubes and balm cell are overlaid with a strengthening tube, made of Sea Island cotton and cushioned in pure rubber. Outside of this is put a rubber cover, and the whole is vulcanized as is any tire. Manufactured by S. F. Myers & Co., 48 Maiden lane, New York.

NEW STYLES IN FOUNTAIN PENS.

THE business of preparing hard rubber fountain pen cases is by no means a small one and the leaders in the trade are those who make goods of a fine quality and next who are able to pro-



duce artistic designs, coupled with fine finish. The illustrations show samples of work which is proving very attractive to the trade, and which is manufactured by Betzler & Wilson, Akron, Ohio.

THE HULBERT PNEUMATIC BRAKE.

No brake on the market so thoroughly deserves the attention of rubber men as the Hulbert Pneumatic Brake, for the reason



that it is almost entirely made of rubber. It consists of a rubber bulb which is attached to the handle bars, a rubber tube running back as far as the rear wheel, and a rubber surface where the brake comes in contact with the tire. The arrangement is also capable of many adjustments. For instance, the braking shoe air-pocket can be fastened on the rear wheel, front wheel, or to both wheels for use on a tandem. Further than this the bulb can be at-

tached to the handle bar, the saddle, or almost any part of the machine, or it can be dropped in the pocket and operated by squeezing from the outside of the pocket. The Hulbert is to the bicycle what the air brake is to the railway train, quick, safe and reliable. Manufactured by Hulbert Bros. & Co., 26 W. 23d street, New York.

SAWYER AUTOMATIC HOLD-FAST RUBBERS.

THE "Hold-fast" is a neat little attachment going on the side



of rubber shoes which both holds the rubber firmly to the heel of the leather shoe, and also protects the trousers by keeping them out of the mud. By the use of this the rubber can be more loosely fitted and



still cannot slip off or get stuck in the mud. A loose fitting rubber wears longer than one that is fitted tightly, and is far more comfortable, as it does not cause the foot to perspire, all of which recommends the "Hold-fast." Manufactured by Brown Shoe Co., St. Louis, Mo.

THE WALRUS STEAM PACKING.

THE call at the present time seems to be for a high grade steam packing, especially for one for which an inferior packing cannot be easily substituted. The Walrus is a distinct departure in its appearance to begin with, as it has a curiously mottled surface in black and red, that will prevent its being confused with any other packing. Further than this it is made of fine Pará rubber, carefully compounded with mica, asbestos and other ingredients, that give it peculiar heat resisting qualities. It is perhaps as high a priced sheet-packing as there is in the market and appears to be in a fair way to be one of the most popular. Manufactured by the Manhattan Rubber Mfg. Co., 64 Cortlandt street, New York, N. Y.

THE MARVEL GLOVE-FITTING RUBBER.

THE beautiful molded rubber shoes, known as the Marvels, have already been illustrated and described in THE INDIA RUB-

BER WORLD. The new type here shown which in the pointed toe, is equal to anything that the Marvel company have ever made. These rubbers, it will be remembered, are of a high grade stock, and are so elastic, that the directions for fitting them are quite important. As they are glove fitting, they should be put on as are kid gloves; that is the fore part of the shoe should first be covered completely, which will allow the heel to be brought up over the



heel of the leather boot, and insure a perfect fit. Manufactured by the Marvel Rubber Co., Providence, R. I.

THE CENTURY THROAT AND NASAL ATOMIZER.

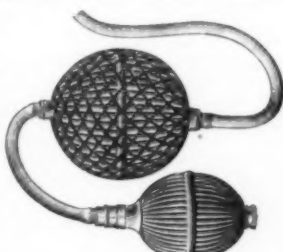


THE long tapering spray tube curved at the most convenient angle for entering the throat, makes this atomizer especially adapted for throat and nasal work. Supported on this tube is a tongue guard, enabling the operator to depress the tongue, while a fine spray is played directly upon the diseased parts without waste or loss. The tongue guard is easily slipped off of the tube and the nasal cone or other fittings adjusted

as desired. Manufactured by the S. H. Wetmore Co., 242 Pearl street, New York.

A DOUBLE BULB ATOMIZER OUTFIT.

THE variety in the combination of double bulbs is almost endless, and where the best of stock is not used, and a knowledge of the requirements kept in view the goods are apt to give but indifferent satisfaction. The illustration shows an outfit that leaves nothing to be desired on either of these points. The red fluted bulb is a decided novelty, and the combination has been called "the best on the market." Manufactured by the B. F. Goodrich Rubber Co., Akron, Ohio.



MATTSON PERFUME-ATOMIZER, NO. 105.

THE newest atomizer brought out by the firm named below is offered as embodying not only a good quality of rubber and well-constructed fittings, but a degree of attractiveness in appearance calculated to commend it to buyers. In this case the color scheme, so to speak, includes the red of the rubber ball, the gilding of the metal fittings, and the olive-green of the glass. The company named make a specialty of their red rubber for druggists' sundries, and they now offer to the trade atomizers entirely of domestic manufacture as being equal and even superior to most imported goods. Manufactured by the Mattson Rubber Co., Nos. 241-243 Greenwich street, New York.



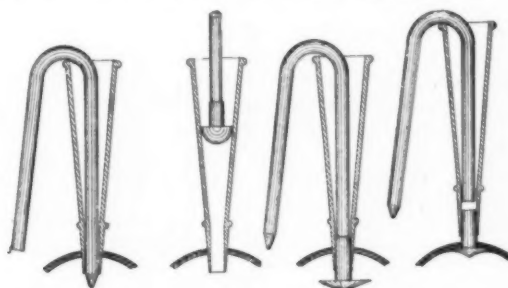
FLEXIBLE RUBBER BLACK-BOARD.

AN exceedingly ingenious article which is now being put on the market for use particularly in schools, is known as the

Flexible Rubber Blackboard. It is sold in sheets four feet wide and 60 feet long and will conform to any wall, even or uneven, being attached by the use of a water-proof glue. It has many advantages over all other blackboards. In the first place it has length and width without seam or joint, of perfect adaptation to any wall, and a surface that will last practically forever. The eraser used is a wet cloth or sponge, which does away with all the rasping and grating noise of the ordinary eraser, and further dispenses with all chalk dust in the school room. The rubber blackboard has been found to take the marks of either crayon or pencil exceedingly well, and the manufacturers give a written guarantee to replace any board the surface of which fails within ten years. The same manufacturers by the way, are making a school slate of this material of any size, with a soft rubber frame, the whole vulcanized in one piece. A sample of the rubber black-board stock shows a thin coating of black rubber compound, vulcanized upon a closely woven cloth backing. The surface of the rubber shows that the compound contains considerable emery flour, and it is evident that a deal of care has been taken in further experiment toward getting a compound exactly suited to this work. The black board is the invention of J. H. Adams, D. D. S., who is president and treasurer of the Flexible Rubber Black-board Mfg. Co., Akron, Ohio.

THE X-RAY PLUGGER.

THE illustrations show very plainly, about the simplest form of tire repairer that has yet appeared. What is known as the X ray has only two parts, one for pushing the fabric apart



where it has been punctured, and the other for inserting the cement and the plug. Manufactured by J. D. Moomy, 132 E. 12th street, Erie, Pa.

RUBBER HANDLE COVERS.

THE Red Cross goods in rubber are already very well known. The latest is a neat serviceable cover for cork handles, made of fine rubber cloth crimped and fastened with silk cords. Being made of rubber they protect the handles from moisture and can also be readily cleaned when soiled. These covers are very nearly indestructible and will last for years.



Their appreciable sale of course is where bicycles are carried in stock and where every customer that comes in, whether his hands are clean or dirty, insists on taking hold of the handles when he examines a wheel. Manufactured by Arlington U. Betts & Co., Toledo, Ohio.

THE ELLIOTT SKIRT HANGER.

THE long skirt has always been a burden to the wheelwoman. To find relief from its annoyances some have tried bloomers,

and others, short skirts. Both are unsatisfactory in a way, as they are not adapted for all occasions. Attempts have been made to construct an adjustable skirt, but wheelwomen like a change, not caring always to wear one particular skirt to ride in. The Elliott Skirt Hanger was designed especially to surmount all these objections. It is a simple device, by the use of which any skirt may be worn with comfort and safety. It weighs but an ounce; it may be carried in the tool bag or pocket when not in use; it is ornamental—it is everything for the wheelwoman. Manufactured by Bert S. Elliott, Penn Yan, New York.



THERE IS NO TIRE TRUST.

TO THE EDITOR OF THE INDIA RUBBER WORLD: It has been truthfully said that one should avoid the appearance of evil; but in a suspicious world this is a duty more frequently enjoined than heeded. To misunderstand motives is as easy as to make the worse appear the better reason; and we deem that man wise who jogs along, paying no heed to the gossip of the day, whether it is aimed at him or not. Mankind is so constituted as to be unhappy when it is not in the enjoyment of some form of ill health; and of late years one of the most popular diseases has been what I might call the "trust-ail." As I cut but a small figure in the great mercantile community, I ought to escape the infection, but I have been so often saluted of late by a query as to how the "Tire Trust" is getting on, that I sometimes feel like simple answering in the conventional form after an interesting event: "As well as could be expected." But this answer might be construed into an acknowledgment that such an infant has been actually born into the stirring world of commerce; and perhaps, Mr. Editor you will permit me to trench upon your space in order to state, in the words of the immortal Mrs. Gamp, that "there aint no sech a pusson."

Such a thing as a tire trust has never been thought of, much less attempted. There has been no need of one. There are generically two species of pneumatic tires made: inner tube and single tube tires. Of each of these genera there are several species, all known by their names and reputations, and valued accordingly. The prominent manufacturers of tires, men of large capital who are in the business to produce good tires, and to make a fair profit by honorable competition, have always been of one mind. There has never been any disposition on the part of such concerns as Morgan & Wright, Gormully & Jeffery and Dunlop, or as the Hartford Co., the Boston Woven Hose & Rubber Co., the Palmer Co. or the New York Tire Co. to seek trade by cutting prices. There is a fair profit in tires to-day; but I doubt if for a generation there has been any article of such vast consumption manufactured under patents, that has been sold at so small an average gain. Concerns of the above stamp propose to get a reasonable return from their production or quit producing, and their broad connections and high repute have so far enabled them, and others of their ilk, to sell practically all the tires in the country.

It is true that a number of tire manufacturers have held a meeting to discuss the situation of the trade; and it is also true that these manufacturers agreed to form a Tire Association. But the meeting was an entirely informal one, at which the representative manufacturers met to shake hands, exchange views as to trade prospects, and later to dine with the gentleman who called them together; and the Association it was voted to form is to be only a social organization—a club—at

which members may discuss any topic they choose (except politics) and which shall afford them all an opportunity from time to time to barter opinions as to the tire trade. There has not been, is not, nor will be any agreement among these men to regulate prices or to control the market. If A says to B: "My tires are not in the market to be sold at less than \$7.00 a pair"; and B rejoins that "he will get at least \$8.00 for his throughout the season," I presume the croakers might construe this into a trust, much as they would do if both A and B should agree that the weather looked suspiciously like rain to-morrow;—but there would not be a trust in it for all that; and even Sherman has not logic enough to bring A and B within the ban of his Act. There is not, nor will there be any tire trust. If any one has conceived such a thing, it has died still-born.

The tire-trade is controlled by certain groups of patents. Now a patent is itself a sort of monopoly or trust, but it is one created by the government and sustained and approved by the public. An inventor, in consideration of the disclosure of his invention, is given the right for seventeen years to practice his invention exclusively; and after that term the public owns it. Our immense strides in the United States in mechanical matters are due almost solely to our favorable patent laws.

The owner of a patent has a clear right, if he so elects, to keep the exclusive use of it to himself; or he has the clear right so to limit its use by others to whom he may grant licenses as that he may not be injured by his licensees. If a patent owner was compelled by law to grant licenses to every one and on all kinds of terms, there would be no value in his patent at all; for some of his licensees would undersell him, and rob him of the profit the government has assured him. Therefore, a patent owner may rightfully say to his licensees: "You shall sell my patented article for no less than such a sum, for if you do, you will lose money, and be unable to pay me my royalty." This is a right never questioned, and on patented articles the public always expects to pay a somewhat higher price than on those which any one may make. If the price is too high, the article will not sell, and this fact admirably regulates the market.

An agreement of the kind mentioned exists between some of the owners of tire patents and their licensees; but there never has been any agreement whatsoever among tire manufacturers, and therefore there has never been anything approaching a trust. In fact a patented article does not come under the anti-trust laws; but it is left to the discretion of the patent owner to regulate its price during the life of the patent. If it is worth the price charged, it will sell; if not people will use the old devices.

May I ask you, Mr. Editor, to say to the large and influential public which reads your valuable journal that the "Tire Trust" is a fiction of imaginary gossip? Yours truly,

THEODORE A. DODGE.

Boston, June 26, 1896.

INDIA RUBBER NOT WATERTIGHT.

INDIA-RUBBER has been generally considered absolutely watertight, but experiments with a hermetically sealed rubber bottle of water show that it is not. The original weight of the bottle filled with water was 1 pound 1 ounce 4 drachms; in one year, 1 pound 1 ounce and 2 drachms; in 9 years, 1 pound; in 18 years, 14 ounces 2 drachms; in 23 years, 13 ounces 4 drachms; in 25 years, 7 ounces 8 drachms; in 28 years, 3 ounces 14 drachms; in 30 years it was cut open and found to be quite dry. The bottle then weighed 3 ounces and 4 drachms.—*Scientific American Supplement.*

THE LARGEST FOSSIL FLOUR PLANT ON EARTH.

ONE of the most interesting of all the valuable earths that the rubber and kindred trades use, is what is known as diatomaceous earth, or in commerce, as Fossil Flour. Although to the naked eye it looks like an impalpable powder, under the microscope it resolves itself into a mass of minute shells, each one of which, in ages gone by, was the home of that tiniest of living atoms the *Infusoria*. These shells are not made up of lime as

Co. have spent over \$100,000 and with the entirely original processes that they have for preparing the earth for market they now rank not only as the largest producers of diatomaceous earth in the world, but the only ones who produce a perfectly pure and uniform article.

At the present time many hundred tons of this earth are used in the rubber trade yearly, and these new and superior grades will doubtless be eagerly sought, and the business largely increased. Fossil Flour has been found of especial advantage in compounds that are brought in contact with heat, with acids or alkalis, or that are designed to furnish an exceptionally tough wearing surface.



THE FOSSIL FLOUR COMPANY'S PLANT.

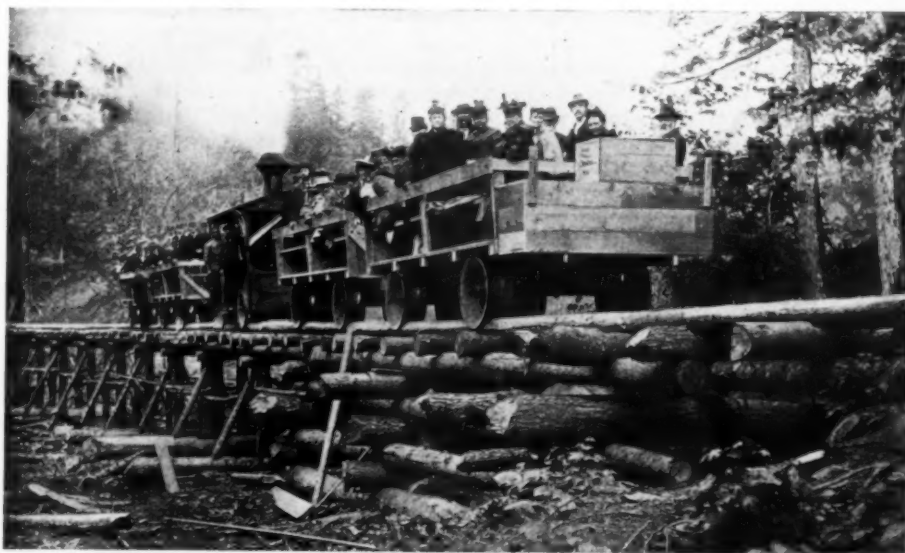
are oyster shells for instance, but of pure silica with which so many ponds and lakes are impregnated. Some years ago vast deposits of this earth were located in Nova Scotia and much of the material was mined and sent to the United States.

While answering its purposes fairly well it contained grit and impurities that hindered its use in many places where it would otherwise have been deemed indispensable. The Fossil Flour Co. determined to solve the problem of its preparation for market regardless of cost, and after two years of experimentation, they have erected the plant shown in the accompanying illustration. Not only have they succeeded in producing a perfectly pure article, but they have put the business on a commercial basis and are now turning out sixteen tons a day of the finished product. The plant is at Bass River, Nova Scotia, and is connected by a pole railway with their wharf property, from which the earth is shipped to the United States and Europe. This railway, by the way, as a feat of engineering, has attracted attention on all sides, the whole eleven miles being laid through a dense forest and up the side of mountain in a trifle over two months' time. On the plant, the railway, etc., the Fossil Flour

RUBBER-PLANTING NOTES.

THE state government of Pará, according to *The South American Journal* (London), has offered premiums of 1000 milreis (= \$54.60 at par of exchange) per lot of 2000 India-rubber trees planted, and 500 milreis per 1000 cocoa- or coffee-trees planted. Excellent coffee has been produced in portions of the Amazon valley, and it is believed that Pará may accomplish something in the same direction, particularly if the possibility exists of adding to the income of the plantations through the planting of India-rubber.

An interesting experiment in the cultivation of Pará rubber is being made on Halwatura estate in the Kalutara district, Ceylon, says the *Tropical Agriculturist* (Colombo). About a year ago Finlay, Muir & Co. purchased some 50,000 plants which were planted on Halwatura by Mr. Hendry. The trees, show a surprising growth and, like those on the government



THE FOSSIL FLOUR COMPANY'S POLE RAILWAY.

experimental plantation in the same district, promise well.

According to William M. Little, United States consul at Tegucigalpa, rubber-cultivation is attracting attention in Honduras. He tells of a friend of his who, besides making a profit from a banana plantation, has sold enough rubber from trees planted between the banana rows to pay for the land.

BRIEF ABSTRACTS OF RECENT RUBBER PATENTS.

AMONG recent patents issued by the United States Patent Office, embodying applications of India-rubber or Gutta-percha to a greater or less extent, have been the following. It is not practicable here to do more than to note the use of rubber in each case, with sufficient detail to enable those who are interested to decide whether or not to look into any particular patent more fully:

TIRES.

No. 559,833.—Air-valve for Pneumatic Tires. Julius Schipkowsky, South Milwaukee, Wis., assignor of one-half to W. F. Hatch, same place.

In a pneumatic-tired wheel, the combination with the rim and the tire, of a valve-casing having a concavo-convex plate at its inner end fitted to the inner tire and coming between it and the enveloping-jacket, the outer end of the valve-casing bearing against the outer side of the rim, a valve-tube having exteriorly-threaded end portions and an intermediate exterior polygonal flange, and having one end portion screwed into the valve-casing and clamping the rim between the end of the valve-casing and the polygonal flange, the valve-tube having a longitudinal eccentric air-passage and a threaded opening in its outer end communicating with the air-passage, a flap-valve at the inner end of the valve-tube for closing the air-passage, and a cap for closing the outer end of the valve-tube.

No. 559,873.—Pneumatic Tire. Frank Sweetland, Angola, N. Y.

In a fastening device for pneumatic tires, the combination with the outer case split longitudinally and formed at or near its edges with continuous hooks or beads, of a locking-band extending entirely around the rim and formed with continuous hooks or beads at its edges adapted to interlock with the tire edges in close proximity to the extreme side edges of the rim, the beaded or hooked edges of the locking-band being provided with longitudinal, continuous and inelastic reinforcements of less diameter than the rim at its side edges and the intermediate portion of the locking-band between the reinforcements being elastic both longitudinally and transversely.

No. 559,937.—Pneumatic Bicycle-tire. Frank Douglas, Chicago, Ill.

A bicycle tire casing composed of cloth and rubber, opened between the two continuous projecting lugs or beads which are molded of the material composing the casing, with the space between the lugs and the edges thickened and stiffened and cut or molded into interlocking buttons or dovetails between the two projecting beads when used in combination with a wheel-rim, provided with central grooves to receive the beads.

No. 559,958.—Tire-protector. John R. Terry, Long Island City, N. Y.

In combination, a wheel-rim, a pneumatic tire therein, a tire-protector composed of a series of non-puncturable strips extending along the tread of the tire, and spring-clips spaced apart along the protector and adapted to embrace the tire and rim of the wheel, the clips being interwoven with the strips and securely fastened thereto for locking the strips together and preventing the displacement of the clips.

No. 559,987.—Pneumatic Tire for Bicycles. George Van Wagenen, New York, N. Y., assignor to Ethelinda Van Wagenen, same place.

A pneumatic tire having at its inner circumferential edges a solid plano-convex section fitting the concave rim of the wheel and containing in line with its length a series of longitudinal plates.

No. 560,192.—Pneumatic Tire. George H. Chinnoek, Brooklyn, N. Y., assignor by mesne assignments, to the Self-Healing Pneumatic Tire Company, of New York.

In a pneumatic tire the combination of a tube provided with a non-elastic portion and a band of self-healing material and

also provided with suitable ribs or projections with an outer cover provided with suitable recesses to fit the ribs or projections and held in position by the pressure of the air within the tube.

No. 560,196.—Pneumatic Tire. Harry C. Dean, Long Island City, N. Y.

A guard or shield for pneumatic tires, formed of a series of plates or sheets of spring metal, each having at opposite ends inclined slots and rivets, the rivets of one plate working in the slots of an adjacent plate, the plates having transverse bends formed in them and fitting together to form a projecting central bead extending around the tread of the tire.

No. 560,246.—Pneumatic Tire. Henry J. Weldon, Brooklyn, N. Y.

A pneumatic tire comprising a series of independent sections, valve-tubes projecting from each end of the sections, a series of couplings provided with a filling-aperture connecting the tubes, and valves arranged in the couplings whereby all or any pair of the sections can be put into communication with each other.

No. 560,376.—Pneumatic Tire. Max Stern and Georg Rothglessner, Dusseldorf, Germany.

A cover for a pneumatic tire consisting of an annular strip of any suitable fabric having an inextensible band or hoop located in or attached to one or both of its edges, the edges being adapted to lie over one another on the outer face or tread of the tire and become locked to each other when the tire is inflated.

No. 560,408.—Puncture-proof Covering for Pneumatic Tires. Charles W. Hazeltine, St. Louis, Mo.

A puncture-proof covering for pneumatic tires composed circumferentially of sections of layers of woven fibrous material arranged over the tread, and having strips of rubber joining the sections, with an elastic envelope therefor, whose edges are secured to the rim.

No. 560,583.—Protective Armor for Pneumatic Tires. Dom A. Zan, San Francisco, Cal.

A protective covering for pneumatic tires consisting of a padding placed over the tire, a circumferential spring-metal band lying upon the padding, and a flexible metallic cloth fitted over and surrounding the band and the padding and adapted to be attached to the rim of the wheel.

No. 560,546.—Tire for Vehicle-Wheels. William E. Steinbach, Philadelphia, Pa., assignor of one-half to George F. Keating, same place.

A cushion-tire, an elastic tread and a spring-actuated device for connecting the tread with the rim of the wheel, consisting of a slotted tubular support, and guide, a T-shaped hanger connected thereto and to the tread, a spiral spring encircling the support and guide, and means for connecting the same to the tire and rim of the wheel.

DRUGGISTS' SUNDRIES.

No. 559,417.—Syringe. William B. Spener, Chicago, Ill.

In a syringe the combination of a back flow-receiver having a side opening, a flexible supply tube adjustably fitted in the opening and having an extended flexible nozzle portion, and a curved semi-circular rigid nozzle-supporting arm arranged within and sustained at its lower end against the inner side of the receiver, the nozzle-supporting arm being provided at its upper end with a clamp ring or collar of a less diameter than and tightly embracing the supply tube.

No. 559,980.—Anton C. Eggers, Brooklyn, N. Y.

In a syringe, a drainage-bulb provided with an annular trough in its upper part, having bottom perforations, the outer edge of which trough joins the greater circumference of the bulb, and with a central outwardly-extending conical annulus, merging from the inner portion of and encircled by the trough, in com-

bination with a longitudinally-grooved nozzle passing through and engaged by the annulus, and a supply tube connected with the base of the nozzle, the base terminating in the upper part of the bulb.

No. 560,225.—Atomizer. Hiram R. Mills, Port Huron, Mich.

In an atomizer a reservoir-bottle having a spray-tube and an air-inlet tube, and an air-outlet, located separate from the spray-outlet and provided with an automatic cut-off located in position relative to the position of a hand holding the bottle, so that it may be operated by a finger of such hand to shut off or turn on the spray by opening or closing such air outlet.

No. 560,577.—Atomizer. Alexander W. Krumm, Cincinnati, Ohio.

In an atomizer a vaporizing tube composed of a central internal plug having one or more grooves, a tube or shell fitting over or surrounding the plug, and having one or more transverse holes and short vertical flattened faces constructed at its lower end to coincide with one or more of the grooves, and a sleeve or jacket surrounding the shell at its lower end, from a point just above the upper end of channels, and having one or more outwardly flaring vapor-exit orifices registering with the holes, the whole being suspended within a suitable receptacle or vessel and provided with means for producing an air or other blast through the atomizer-tube for vaporizing the contents of the vessel, and a suitable discharge for the medicated vapor leading from the vessel.

No. 560,984.—Elastic Bottle. Levi L. Funk, Chicago, Ill.

A bottle consisting of a neck of non-elastic material, a rubber tube forming the elastic body part, and a clamp fitting over the bottom in which the end of the rubber tube is pinched and closing the tube, with a ring extending around the portion of the elastic body part which is attached to the neck, such ring being formed by spinning or pressing an annular flange on the neck down into contact with the elastic body part.

NOTIONS.

No. 560,289.—Dress-Shield. DeVer H. Warner, Bridgeport, Conn.

A dress-shield having in each section a sheet or tissue of waterproof material, and an open fabric facing at the side next the wearer, in which fabric the warp and weft threads are woven in separate series crossing each other to leave intervening spaces, whereby to prevent the rapid convection of fluid along the fabric and facilitate evaporation and reduce the weight of the shield.

No. 561,067.—Dress-Shield. Benjamin F. Sutton, Brooklyn, N. Y., assignor by direct and mesne assignments to the Parker, Stearns & Sutton of New York.

A dress-shield of pliable and flexible material corrugated to form in connection with the dress and body of the wearer when in use a series of collapsible and dilatable tubular channels.

MISCELLANEOUS.

No. 859,511.—Dental Hot-air Syringe. Albert J. Burns and Henry C. Reeves, Fairport, N. Y.; Reeves assignor to Burns.

In a syringe, the combination, with the handle, of an air-forcing bulb lying alongside and in close proximity thereto, and a yoke to which the bulb is attached, the yoke provided with rings which turn on the handle.

No. 559,845.—Stopper for Washbasins and Bath-tubs. James N. Crabb, Indianapolis, Ind.

In a stopper for wash-basins, the combination with a tapering guide constructed to loosely engage the outlet-passage from the basin, of a flexible disk, having a diameter considerably greater than that of the guide, suitable fastening devices for securing the disk upon the top of the guide, and concentrically therewith, whereby the stopper may be with facility placed in position over the outlet-passage which is then closed by the flexible disk irrespective of the precise position of the guide.

No. 560,119.—Soft-tread Horseshoe. Herman F. Boehmer, St. Louis, Mo.

A horseshoe provided in its lower face with a groove or chan-

nel adapted to receive a packing of elastic or yielding material, such groove extending around the toe part of the shoe and backward a little beyond the center of the shoe, the lower faces of the shoe in rear of the groove being plain and flush with the lower edges of the walls of the shoe on either side of the groove.

No. 560,170.—Billiard-Table Cushion. Jacob N. McIntire, New York, N. Y., assignor to the Brunswick-Balke-Collender Company, Chicago, Ill.

The combination with a rubber cushion strip having a working face such as specified, of a face-hardening strip molded therein in rear of the face; of a width about half that of the face; and arranged parallel therewith, and with its upper edge about on a level with the top edge of the working face.

No. 560,224.—Machine for Cutting Soles. Amasa E. Lincoln, Stoughton, Mass.

In combination a table mounted upon a shaft; that shaft, a carriage moving radially toward and from the axis of the shaft to carry the knife about a pattern; that pattern means to connect the knife-carriage with the table and compel it to move radially as the pattern requires; an oblong eccentric driven gear fast to the shaft; and an oblong eccentric driving-gear, in mesh with the driven gear.

No. 560,850.—Bicycle Ice-Creeper. William T. S. Morrison, Cornish, Me.

In combination with a pneumatic tire a flexible strap bearing two or more points, the strap having an adhesive inner surface and holding, within its folded ends by means of its adhesiveness and compression on the folded ends, a fastening device whereby the strap is secured around the rim and tire.

No. 560,963.—Bicycle-Saddle. Edward C. Bartlett, Lorain, Ohio, assignor to E. M. Borne and W. Bonsor, same place.

A bicycle-saddle comprising a stiff base, an inflatable tube or sack resting thereon, and an elastic covering extending over and inclosing the tube or sack and suitably secured to the base, the covering being provided upon its upper side with numerous upwardly-projecting hollow cylindrical lugs integral with the covering and having flat top surfaces arranged in a continuous common plane and collectively forming the seat portion of the saddle.

No. 560,165.—Swimming and Life-Saving Device. Hans Heckler, Frankfurt-on-the-Main, Germany, assignor to Charles Heckler, Missoula Mont.

A life-preserver in the shape of a garment, having a lining made of separate ends of hose, each provided with an inflating tube, in combination with a mouthpiece having tips or nozzles screwed into transverse openings of a block, inclosed in a sleeve with a screw-threaded socket in its top plate, the openings in the block being covered by a valve-plate, secured to the end of a hollow transversely-perforated screw-stem through which air is blown to inflate the reservoir.

TRADE-MARKS.

No. 28,204.—Waterproof Clothing and Rubber Goods of All Kinds. Zachary T. Lindsey, Omaha, Nebr. Filed April 10, 1896.

Essential feature.—The word "Chief." Used since April 2, 1896.

No. 28,229.—Pneumatic Tires for Bicycles and other Vehicles. Reading Rubber Tire Co., Reading, Mass. Filed April 8, 1896.

Essential feature.—Either a pictorial representation of an alligator or the word "Alligator," or both the pictorial representation and the word "Alligator." Used since February 15, 1896.

No. 28,301.—Rubber Vehicle Tires, Bags, or other Articles of Rubber Holding Gases, their compounds or fluids. The Self-Healing Pneumatic Tire Company, New York, N. Y. Filed April 10, 1896.

Essential feature.—The figures of two concentric circles, a Greek cross and the words "The Self-Healer." Used since March 5, 1896.

DESIGN PATENT.

No. 25,459.—Shield for Bicycle Tires. Thomas Furlong, St. Louis, Mo. Filed April 6, 1896. Serial No. 586,453. Term of patent 14 years.

END OF THE RUBBER-RECLAIMING SUITS.

A DECREE entered in the United States circuit court for the district of Connecticut, at New Haven, on June 8, in the suit of the Chemical Rubber Co. v. Goodyear's Metallic Rubber Shoe Co. and Emmett A. Saunders, was the last step in the prolonged litigation over the rubber-reclaiming patents. The action referred to dates from the filing of the bill of complaint, in September, 1888, which set forth that certain patents for recovering rubber from rubber waste, and owned by the Chemical Rubber Co., had been infringed by the parties named as defendants. The reply of the defendants was dated December 3, 1888, and filed shortly thereafter, since which time testimony has been taken by counsel for the parties at interest, at various centers of the rubber industry in the United States. Similar actions were brought by the Chemical Rubber Co. against Murray, Whitehead & Murray (Trenton, N. J.) and the Raymond Rubber Co. and others (Harrison, N. J.), in both of which cases there were proceedings similar to those in the action first mentioned.

The first decision rendered in any court bearing upon these cases was that by Judge Dallas, at Philadelphia, in May, 1895, in favor of the Raymond Rubber Co., in which it was held that the patents of N. Chapman Mitchell had not been infringed by the defendant company in their manufacture of reclaimed rubber, and upon this ground the bill was dismissed. This case had been tried in New Jersey, but for convenience was transferred to Philadelphia, which explains why the decision was rendered by Judge Dallas.

On May 23, 1896, the case against Murray, Whitehead & Murray was dismissed by the United States court at Trenton, on the ground that, under the decision above mentioned, the patents were not valid.

On April 28 a motion was made before the United States court at New Haven to have a decree entered in the case against the Goodyear's Metallic Rubber Shoe Co. similar to those in the other cases, and June 8 was assigned as the date for a hearing. On that date the motion was granted and a decree entered transferring the decision in the New Jersey case, which now applies in favor of the Goodyears' Metallic Rubber Shoe Co.

The Chemical Rubber Co. is the name of a corporation formed under the laws of the State of New York on December 10, 1887, for the "manufacture and sale of India-rubber goods and the reclaiming of unvulcanized and vulcanized rubber." The capital stock authorized was \$250,000, in shares of \$100 each. The limit of existence of the corporation was placed at fifty years. The names of the incorporators were John H. Cheever, Augustus O. Bourn, Nathaniel C. Mitchell, John D. Cheever, and Robert J. Cummings, who were named as trustees who should manage the concerns of the company for the first year. The company acquired, on February 29, 1888, control of the several rubber-reclaiming patents granted at various times to N. C. Mitchell, Augustus O. Bourn, and Charles J. McDermott, and shortly afterward brought the three suits above described for alleged infringement of the patents. The company's solicitors were F. A. Marden, A. Pollok, and Lee & Lee. The counsel for the defense was Livingston Gifford, in the cases against the Goodyear's Metallic Rubber Shoe Co. and Murray, Whitehead & Murray, and Francis T. Chambers, in the case of the Raymond Rubber Co. The printed record of testimony, filling several bulky volumes, covers pretty fully the history of rubber-reclaiming from the beginning, much of which has appeared from time to time in abstracts published in THE INDIA RUBBER WORLD.

THE HEAVY OUTPUT OF ACCRA RUBBER.

JUDGING by the history of certain other African sources of rubber, it was supposed, at the time that the Gold Coast colony first became a large producer, that the trees or vines would soon become exhausted, resulting in a speedy diminution of the yield. But the custom-house returns from Accra show, at the end of the sixteenth year since rubber was first exported from the colony, a larger output than in any of the preceding years. Through the courtesy of the British customs officials, THE INDIA RUBBER WORLD is enabled to present herewith the only complete showing yet published of the extent and value of rubber shipments from Accra from the beginning:

YEAR.	Pounds.	Value.
In 1880.....	1,200	\$ 215
In 1881.....	555	155
In 1882.....	70	5
In 1883.....	57,913	11,372
In 1884.....	223,843	68,160
In 1885.....	548,474	130,875
In 1886.....	1,549,121	349,555
In 1887.....	1,306,252	312,430
In 1888.....	878,387	190,240
In 1889.....	1,241,628	275,990
In 1890.....	3,361,055	1,156,410
In 1891.....	2,946,913	994,507
In 1892.....	2,663,020	833,300
In 1893.....	3,395,990	1,090,812
In 1894.....	3,027,527	1,162,750
In 1895.....	4,022,385	1,610,350
Total.....	24,224,333	\$8,187,066

The values quoted above are those reported to the Gold Coast customs service in English money, converted at \$5 to £1. It is interesting to note the gradual increase in values. Some two years ago THE INDIA RUBBER WORLD published a statement showing the average value of Accra rubber exports, up to and including 1892, to have been about 12½¢d. per pound. But during 1894 the average was 18½¢d. and during 1895 it rose to 19½¢d. The next table shows the destination of the rubber exports from Accra, the figures referring to pounds:

COUNTRIES.	1894.	1895.
United Kingdom.....	2,729,395	3,597,052
Germany.....	229,478	424,197
United States.....	68,054	.....
Lagos.....	.....	1,136
Other African ports.....	600	.....
Total.....	3,027,527	4,022,385

The rubber produced in the Gold Coast colony is known commercially by the names "Accra," "Cape Coast," "Saltpond," "Axim," and "Addah," which belong to towns in the colony. The most important of these is Accra, which has about 20,000 inhabitants, and is the center of commercial activity and of administration.

THE state of Pará is at present paying eighteen different steamship subsidies, amounting in the aggregate to 523,000 milreis per year. The latest arrangement to be made is with the Amazon Steam Navigation Co., Limited, for a semi-monthly service from Pará to Itaituba and a monthly service to Faro. These points are at the head of navigation respectively of the rivers Tapajos and Jamundá, and both are within the rubber-producing district. The subvention is to be 60,000 milreis annually for ten years.

THE EXPORT OF AMERICAN BICYCLES AND TIRES.

OUR rubber-men have reason to be interested in the fact that, at the present rate of increase, the export of bicycles and bicycle tires will soon make an important showing in the foreign commerce of the United States. Already the figures are large, in view of the recent conditions of the bicycle trade. First of all, the manufacture of bicycles, including tires, is the youngest of all the great industries, and it gained an important footing abroad before it was largely developed in the United States. So recently as 1893 we imported from Great Britain alone bicycles and bicycle parts of the value of \$1,001,375, but the output of wheels at home by that time was proceeding at a steady rate, and within two years the importation of foreign wheels had become a thing of the past. The only way by which English manufacturers of bicycles and tires have been able of late to effect any sales here has been through the establishment of American branch factories, and even these cut a comparatively small figure in the trade. Meanwhile the conditions of 1893 and the few years preceding have become reversed, and the United States is exporting bicycles to every country in the world in which their use has become known. During the three months ending June 30, 1896, bicycles were exported from the port of New York to the value of \$728,603, and this without taking into account extra tires and the various items of "sundries" which now absorb the energies of so many extensive manufacturers. The details of these exports will be noted farther on, but the table given takes no account of any bicycles or materials which may have left the country by other ports. A statement has been published that the total value of bicycle exports from the United States from January 1 to May 30 was \$515,000.

In answer to the question whether this outward movement of bicycles was merely sporadic, or represented a feature of trade which might be expected to show a steady growth in future, the consensus of opinion among those entitled to speak on the subject appears to be that we are merely at the threshold of what is destined to become an enormous business. In the first place, it is asserted that the bicycles now exported from New York are going out on *bona fide* orders. The gentleman in charge of the export agency of the bicycle company having the largest export trade asserts that his firm have never sent abroad any wheels on consignment. His order-book, opened for inspection by THE INDIA RUBBER WORLD, contained orders from nearly every port of entry on the Atlantic and Pacific coasts south of Key West and the Rio Grande, together with Australia and a few points in Europe. One of the largest general export-houses in New York is handling a widely-known wheel for export, receiving orders from South America, South Africa, and Germany. There are other export-houses in the city having similar arrangements with standard makers of bicycles, while at least two manufacturers were named as conducting a direct export trade on their own account. On all hands the opinion was expressed that the foreign trade in this line had only fairly begun.

As to the first step in this new field for foreign trade, it may be of interest to quote from a recent report by Mr. Frank H. Mason, the able United States consul-general at Frankfort o/ Main. He says that American bicycles, and bicycles of any sort for women, were practically unknown in any part of the German empire before the summer of 1895, when a large number of American cyclists, male and female, made tours through picturesque localities in that country. German deal-

ers began to give more attention to American wheels when a cyclist won a race on an ordinary stock bicycle made by a firm having its manufactory at Hartford, Conn. There are extensive bicycle-factories in Germany, and in addition to their products English and other foreign wheels are sold in that country, but Mr. Mason thinks that the less cumbersome American models will become popular there as the people become familiar with them. The lightness of our wheels, however, does not always commend them at first sight. From Buenos Ayres and elsewhere have come reports that, upon the first effort of the representative of an American bicycle to make sales, the dealers in European models of heavier weight would urge lightness as a fault, with the effect at first of discouraging sales. There has also been found in some cases, where the sale of European bicycles had become established, a disinclination at the bicycle depôts to make repairs for American wheels. But gradually the influences of opposition and prejudice have spent their force, until the way now seems open to American manufacturers of bicycles to make sales wherever they can offer a good wheel at a price not higher than that of wheels of the same class made abroad.

As for the means of introducing our bicycles into foreign markets, two are described by Mr. Mason, in writing of the German trade. The first is "by establishing direct relations with a responsible German firm at Hamburg, Bremen, or Berlin, which, in the capacity of general agent, will import the machines, pay duty, and distribute them for retail by dealers and subagents throughout the empire. This method has been utilized with excellent results by the Pope Manufacturing Co., of Hartford, through the well known house of Markt & Co., at Hamburg, which has, during the past year, introduced the 'Columbia' bicycle so successfully that a large and increasing trade has been developed. The second method is for the American exporter to send a competent salesman, who speaks both English and German, equipped with samples and catalogues, to visit the principal cities, exhibit at local exhibitions and club meetings, and arrange sales and contracts with independent bicycle dealers, of whom there is one or more in every large German town. This plan has been adopted by the Lozier Manufacturing Co. for the introduction of the 'Cleveland' bicycle, which has met with such ready favor that the newly established general agency of that company in London has found some difficulty in supplying the new demand in this country."

A comparison of estimates fixes \$50 as the average export value of wheels, which would give 14,572 for the three months in point. The export price of a \$100—or standard-grade—bicycle is generally about \$60; the price charged for \$75 bicycles is \$47.50; and that for a \$50 bicycle about \$35. Some of the wheels exported, however, have been invoiced at \$100. Special export prices are named for bicycles as in the case of most other goods sold for the foreign market, for the reason that the manufacturers make drafts against bills of lading, which is equivalent to selling for cash, whereas cash payments are not the rule in buying from manufacturers in the home trade.

To sum up, "the bicycle craze"—as some people persist in calling it—is going around the world, cropping out in some places in advance of others. Australia is having just now a very pronounced case of it. In all the South American cities, which, as a rule, have fairly good streets for cycling, and which include many people of wealth and fashion, cycling is certain to become as popular as in New York or Paris. The lightness

of American wheels, as soon as it is learned that lightness and strength are not incompatible, will commend them very generally, provided the price is not too high. Finally, the great extension of the bicycle industry in this country is certain to result in over-production, while competition will effect a gradual reduction in the cost of making wheels—two conditions which soon will enable our manufacturers to compete with respect to prices in any market with the European product.

Among the American bicycle concerns which are making a point of their export trade are the Overman Wheel Co., the Pope Manufacturing Co., the Indiana Bicycle Co., A. G. Spalding & Co., the Yost Manufacturing Co., H. A. Lozier & Co., the Western Wheel Works, E. C. Stearns & Co., and the manufacturers of the "Monarch" bicycles. Humber & Co., America, Limited, claim to be shipping 500 bicycles per week to England.

The details of bicycle exports from New York for the three months ending June 30, are as follows:

COUNTRIES.	Four Weeks Ending April 28.	Four Weeks Ending May 26.	Five Weeks Ending June 30.	TOTAL.
Austria-Hungary.....	\$ 150	\$ 865	\$ 1,315	\$ 2,330
Belgium.....	1,484	5,792	4,443	11,719
Denmark.....	1,655	6,553	4,959	13,167
Finland.....	1,965	100	.....	2,065
France.....	13,287	9,854	24,253	47,434
Germany.....	13,003	18,796	29,575	61,374
Great Britain.....	70,267	52,759	274,195	427,221
Holland.....	8,957	8,638	33,846	51,441
Italy.....	6,696	5,683	9,025	21,404
Norway and Sweden..	1,572	4,860	6,433	12,865
Portugal.....	.....	225	1,150	1,375
Russia.....	673	1,700	1,405	3,778
Spain.....	341	.....	.....	341
Switzerland.....	.....	.....	150	150
British North America.	25	34	2,468	2,527
Mexico.....	.....	150	.....	150
Central America....	1,111	1,257	1,308	3,776
British Honduras....	200	227	410	837
West Indies—British..	1,338	1,009	5,628	7,975
Danish.....	38	.....	.....	38
Dutch.....	16	138	.....	154
Spanish.....	1,799	2,528	3,873	8,200
Hayti.....	400	.....	892	1,292
San Domingo.....	.....	23	100	123
Argentina.....	.....	.....	336	336
Brazil.....	132	468	5,652	6,252
British Guiana.....	.....	100	100	200
Chile.....	70	.....	911	981
Colombia.....	1,290	1,707	747	3,744
Dutch Guiana.....	.....	.....	45	45
Ecuador.....	223	232	210	665
Peru.....	90	.....	.....	90
Venezuela.....	104	355	997	1,456
British Africa.....	280	800	1,374	2,454
China.....	588	400	77	1,065
Japan.....	.....	700	1,276	1,976
British East Indies...	94	713	500*	1,307
Dutch East Indies...	90	247	.....	337
Australia.....	6,625	6,655	10,159	23,439
Tasmania.....	.....	120	400	520
New Zealand.....	105	835	1,170	2,110
Total.....	\$134,668	\$164,523	\$429,412	\$728,603

Since all the bicycles exported are complete, it is evident that these exports include a considerable number of tires—enough, in fact, to be of interest to rubber-manufacturers, here and abroad. Taking \$50 as the average export value of a bicycle, the three months' business would include 14,572 pairs of tires. In addition to the tires on the wheels, it is customary to ship with each lot of bicycles a sufficient number of extra tires to meet ordinary requirements for replacements. But there is in prospect a field for the export of tires for foreign wheel-manufacturers. It is known that the Hartford Rubber Works Co.

are making a special tire for export, and they are said to have secured considerable business already. Other manufacturers are considering the propriety of pursuing a similar policy. Morgan & Wright, indeed, are advertising extensively in the foreign cycling press, giving the location of their tire-distributing depôts in Great Britain and on the continent. The Gormully & Jeffery Manufacturing Co. are also advertising their tires abroad. They are, or were, making some of their tires at Coventry, England. The Dunlop tire, which has proved so popular with transatlantic cyclists, retails at about \$15, while its manufacture is in such hands as to make the prospect of price-cutting in the near future out of the question. It is the belief of the manufacturers of single-tube tires in this country that the merits of their tires, together with the price at which they can be exported, will in time open a wide market for them.

Meanwhile the conditions abroad as to tires may best be described in the language of Consul-General Mason, in the report from Germany already referred to. "Single-tube tires were almost unknown here," he writes, "until American bicycles were introduced, and, notwithstanding their great resiliency, lightness, and speed, they are considered too sensitive for touring purposes. The roads of Europe are strewn with hobnails that fall from the shoes of peasants, and as amateurs here possess little of the ready ingenuity of Americans for repairing punctures or other mishaps that may occur to a bicycle, the tire and every other part of touring machines should be as strong and secure as possible against every form of accident. To an expert, the single-tube tire is most easily repaired in case of simple puncture, but few European amateurs have yet learned this, and they cling to the idea that two tubes are less liable to puncture than one." Mr. Mason mentions one maker in Westphalia who imports from the United States wooden rims and single-tube tires and is making lighter wheels than the other German manufacturers. But it is asserted by an American manufacturer of single-tube tires, interviewed by THE INDIA RUBBER WORLD, that most of the American bicycles exported so far have been equipped with double-tube or detachable tires.

DEATH OF JULES S. ABECASIS.

JULES S. ABECASIS died in a hospital in New York city on July 2, as the result of an accident sustained while riding a bicycle on Broadway. Entering the crude India-rubber trade in New York about 1860, when the business of rubber brokerage was practically unknown, he succeeded to such an extent that for years nearly the whole volume of rubber imported here passed through his hands, yielding him a large income and gaining for him the title of "the rubber king." As time passed and changes occurred in the methods of doing business, the extent of his operations declined, but some of his earliest customers gave him their patronage to the end, and he maintained an office—latterly at No. 19 William street—to the date of his death.

Mr. Abecasis was of Portuguese descent, but was born in London, in 1828. He became prominently identified with the Spanish-Jewish colony in New York. He was long a member of the Shrearith-Israel synagogue, in West Nineteenth street, at which funeral services were held on July 6. He was a life-member of Mount Sinai and other Jewish associations, and also of the Lotos Club. He was always to be seen, on opera nights, occupying a front seat in the section set apart for the Vaudeville Club. For years he maintained one of the handsomest cottages at Long Branch. Mr. Abecasis leaves a widow and three sons, who were in London at the time of his death.

THE RUBBER TRADE IN MIDSUMMER AT CHICAGO.

THE end of June marks the ending of a season in the rubber trade and the opening of another season. The sales of small garden hose is about over at this time, and the orders for belting begin to come in. Likewise the bicycle and tire business reaches its climax at this period, and it becomes possible to stop and review the situation. What, then, are the lessons of the season, and what are the prospects?

The Chicago representative of THE INDIA RUBBER WORLD called on a number of rubber men in this western center and obtained some interesting facts and estimates. As the statements of most of the gentlemen interviewed are substantially alike, only the more important and elaborate of the interviews are given here. The briefer talks simply corroborate these.

Mr. R. T. Whelpley, of the Columbia Rubber Works Co., which is part of the B. F. Goodrich Rubber Co., in answer to questions, said in effect:

The volume of business just now is a little lighter than at the corresponding period a year ago. This is due chiefly to two causes: the big drop in the tire business and the rainy weather in this western section, which has been so unfavorable to the sales of garden hose. The slump in the bicycle trade is not confined to the west; the east has suffered in the same way. Of course you know that there has been an immense overproduction in that line, and that the trade is almost demoralized. Hundreds of small manufacturers have entered the field and are trying to sell cheap and inferior wheels in competition with those of the standard makes. The result for the present is that the public are thoroughly infected with the craze for cheapness. The fact that the man who is inveigled into buying a \$25 wheel will have to spend a like amount on repairs is overlooked by most buyers; each has to discover it for himself. The result is that the tire-manufacturers and dealers have found their profits largely gone. Why, it is an actual fact that the Palmer tire, an American invention which is patented in Europe and manufactured in London by a special company, sells in England for a higher price than it does in America. There has not been so much overproduction and excessive competition there.

"Do you expect any immediate improvement in the bicycle and tire situation?" Mr. Whelpley was asked.

"Yes," he replied. "The business is bound to work itself down to a legitimate basis. In the first place, there is bound to be a reaction against cheap machines, as soon as it is found that the cheaper machines are dearer in the long run. In the second place, hundreds of small dealers will be pushed to the wall and competition will be greatly diminished. It is well known that many of the smaller concerns, who lack the proper equipment and facilities, spend just as much on advertising as it costs them to manufacture a wheel. Their advertising bills are simply enormous, because they can make no sales without extensive advertising. There is reason for thinking that next year the bicycle business will be in a healthier and more natural condition, and fair profits will be realized by the responsible manufacturers."

"How were and are the sales of garden hose this summer?" was the next question.

"Nature has been doing the sprinkling," said Mr. Whelpley. The constant rains have killed the garden hose trade. Within a week or two there has been a slight improvement in consequence of the dry weather."

In regard to belting and packing, Mr. Whelpley said that the trade is fairly active. Of course the season is but just begin-

ning. The first and chief demand comes at present from the purely agricultural districts, where belting is needed for the threshing machines. Later on the demand will begin to come in from other quarters.

"What grades are more generally in favor?" Mr. Whelpley was asked.

"There is a decided tendency towards the use of better grades for threshing machines than formerly. Still, there is a big demand for cheap belting from Western country dealers. There is more profit for them in selling cheaper belting. It would be impossible and unfair to name the grades that we find most popular, since every company has its own technical names for its superior articles. You will find it to be a general fact that each manufacturer has now a greater demand for his higher grades than formerly."

"Are there any improvements being suggested by the customers, or changes contemplated by manufacturers in belting, packing, etc.?"

"Speaking for ourselves," said Mr. Whelpley, "I am able to state to you that we are now making active preparations for the manufacture of a new kind of belting. We have been importing special machinery from Europe for the purpose, and as soon as the orders for the usual trade shall have been attended to, we shall go to work on the new article. It will be a real novelty in the American rubber market. At our Akron factory we have been experimenting for some time, and in the fall we hope to be in shape to bring it out. The idea came from Europe, where the kind of belting in question is already known, but in America it has been impossible to manufacture it with the old machinery. It will be a high-grade belt, and its price will be equal to that of the best grade now to be had in America."

"Has there been much demand recently for belting from the Chicago grain elevators?" Mr. Whelpley was asked.

"No; a few years ago, when they were building them, we did considerable business in supplying them with belting, but no new elevators have been built for some years, and the trade with them is limited."

In answer to a general question as to the prospect of an improvement in the rubber trade in consequence of the action of the Republican national convention at St. Louis, Mr. Whelpley said:

"Yes, we expect a great improvement if a gold standard is adopted and if the tariff is changed in the direction of higher duties. Rubber is affected by the tariff more indirectly than directly. Hard rubber has suffered from a reduction of duties, and a higher tariff will benefit that particular branch. In belting and packing the tariff cuts no special figure. We can take good care of ourselves in that respect. The goods are too bulky, and foreign competition is not feared. But indirectly all rubber lines are affected by the general state of trade, and an improvement in industrial conditions cannot fail to be reflected by the rubber industry. Yes, let us have gold and a higher tariff, and good times will come."

Mr. John Brown, manager of the Western branch of the Gutta Percha and Rubber Manufacturing Co. was interviewed with reference to all of the questions discussed with Mr. Whelpley. His statements coincide with those made in the above conversation, but several new points were also brought out. Mr. Brown said that business in the belting line is very fair, but that the agricultural demand runs so largely to cheaper grades of belting that the more important companies do not cater to it. In so

far as the large machinery belting trade is concerned, things are quite dull. Many factories are working short hours, and some are entirely idle. Thus the Illinois Steel Company, with factories in a number of Western cities, is doing hardly anything and recently took advantage of a small strike to shut down one of its biggest Chicago factories. Other companies are in the same condition, and hence the demand for belting is slower than usual at this time.

Mr. Brown does not find that there is any demand on the part of customers for anything out of the regular line, and anticipates no changes in the manufacture of belting, except that the leading manufacturers are naturally alert and progressive and are always planning new things and improvements. It was true, he thought, that the tendency is strongly in the direction of the use of higher grades of belting, but the amusing feature is that there is no perceptible tendency towards paying higher prices. Customers are acquiring the habit of asking for the finest quality at the lowest price. Mr. Brown read, for illustration, a curious letter from one customer, in which he wanted "the finest quality at a low price and with a written guarantee." The responsibility for this, according to Mr. Brown, lies with the irresponsible dealers and reckless salesmen who promise everything and do not hesitate to guarantee the most preposterous requirements.

In respect to garden hose, Mr. Brown also said that the rainy weather has knocked it clear out. Since May 15 there have not been three consecutive dry days in this section. Naturally, instead of buying new hose, people decided that they could get along with that of last year. Even should the weather be more favorable now, it is too late to expect much trade in the garden hose line. People do not buy garden hose after July 1 any more than people buy winter overcoats after February 1. In general, Mr. Brown said, the city trade is not as good at this time as it was last year, while the country trade is somewhat better.

The slump in the bicycle and tire business interested Mr. Brown, because in the fall the Gutta-Percha and Rubber Manufacturing Co. will begin the manufacture of tires. The depression and reign of absurdly low prices are only temporary, and things will right themselves. A good tire will always command a market, and the new tire which they are to put out will be "something special."

Mr. Brown anticipates an improvement in the business situation in consequence of the victory of the gold sentiment in the Republican party.

Mr. Theodore F. Blanchard, of the Chicago Rubber Co., said that their business was rather in excess of that of last year. The belting season has opened encouragingly, and they are obliged to run over-time in their belting department, while in some other departments short-time is still necessary. The demand for belting comes chiefly from the agricultural sections. This company deals only with wholesale jobbers and large agricultural concerns, and sells none but superior grades of belting. The trade in factory belting is dull just now, but not much quieter than it was last year. The demand this season is for the same kinds as were popular last year, and no changes in the manufacture have taken place. Next fall, however, according to Mr. Blanchard, some attention may be given to the introduction of new varieties. The packing trade shows no special improvement, and is as quiet as it was last year at this season.

In regard to garden hose, the season is too far advanced to expect a pronounced change for the better. The season has been the reverse of active, on account of the unfavorable weather.

As for tires, which the company has gone into for the first

time this year, the season is about over. Trade was fair at the outset, but the widespread depression in the bicycle business affected the tire trade and depressed it considerably. The whole bicycle business is shaky and unsettled at present; failures are reported almost daily, and so uncertain are the prospects that, as Mr. Blanchard happens to know, certain manufacturers are actually afraid to sell to the smaller dealers on the usual terms of credit. However, next year is expected to bring order out of chaos, and to reduce the business to a settled basis.

Questioned in regard to the effect of recent political events on the rubber trade, Mr. Blanchard said that so far rubber has not shared the improvement reported as having taken place in dry goods and in other trades. Of course, if the Republicans are victorious and their platform is faithfully adhered to, business is bound to improve greatly. The first essential is the maintenance of the gold standard, and the next is public confidence in the ability of the government to avoid debt. So far as the tariff question is concerned, Mr. Blanchard, while a firm believer in protection, is rather doubtful as to the wisdom of making another extensive change in customs rates. Mechanical rubber people are not directly interested in the tariff, but whatever helps business generally helps them, and hence the question whether a new and higher tariff is necessary to effect a favorable change is not one which rubber people are prepared to answer off-hand.

Mr. Benjamin F. Clifford, the Chicago manager of the Boston Woven Hose and Rubber Co., said in substance:

"The belting season is rather late in opening, but we are doing very well now. The agricultural demand is very brisk. We do not handle the very cheap grades, but there is the usual demand for the superior kinds. We have our stand-by belting for the harvest trade, and are doing so well with it that no changes have so far been suggested.

"Packing is fairly active, but the demand is more and more for cheap goods, and we make no effort to get that trade.

"On the whole business, though very good is not equal to that done last year, because of the slump in garden hose. Early last spring the prospects for a good garden hose season were bright, but nature spoiled it, and things are quiet now in that line. True, seasons of good hose trade have been known as late as the middle of July, but something very extraordinary in the weather is necessary to cause this. Dryness for several consecutive weeks might revive the garden hose trade, but as a rule, little business is expected after July 1."

Mr. Clifford further said that their tire business has been very excellent indeed up till a few weeks ago, when the whole bicycle business received a shock. Since February there have not been tires enough to satisfy the demand, and even the present depression is only temporary.

V. Y.

WANTS A RUBBER BIRCH ROD.

A FIRM of India-rubber goods manufacturers at Newcastle, England, lately received the following epistle from a lady at Bideford:

"Do you keep, or could you make for me, a birch rod of rubber or gutta-percha? I have seen them in schools abroad. I live in a large town, and have a number of unruly children to look after, and find it very difficult to obtain the ordinary form of rod. I should like one about 24 inches in length, and with from sixteen to eighteen pieces in it."

OVER 3000 dozen of the Spurgin rubber-tipped copying cloths have been sold up to date.

RANDOM NOTES FROM PARÁ.

TO THE EDITOR OF THE INDIA RUBBER WORLD: In the issue of *A Provincia do Pará* for May 24 appeared a most sensible article on the danger from the indifference manifested by the Brazilian government toward the political movement now taking place in the department of Loreto, in Peru. The only action that had been taken by the government at Rio by that date was the ordering of the Brazilian consul at Iquitos, then absent on leave, to return to his post! It is no small thing that Iquitos—the commercial entrepôt of a vast region, with a trade in rubber alone amounting to thousands upon thousands of contos, and giving employment to thousands of laborers—should be left to the mercy of General Pierola. Iquitos ranks Manáos in the importance of its commerce, either direct to Europe and the United States or via Pará, and its trade is rapidly growing. The principal valve, as it were, of this expansion of commerce at present is the river Javary—Brazilian on the one side and Peruvian on the other—a river inferior neither in population nor in commerce, nor in wealth of natural resources, to the Madeira, to the Purus, or to the Jurua. The promptness with which the Peruvian government announced its plans with regard to the revolution in Loreto is in strong contrast with the silence and seeming indifference of the Brazilian minister of foreign affairs, and the people of Pará are naturally indignant. They cannot afford to be indifferent to what may happen to their rubber interests which center in Iquitos, or to what may happen yet between the Brazilian frontier and Pará.

It may be noted here that, in the last year for which detailed statistics are at hand, the only tributary to the Amazon credited with a larger rubber output than the Javary was the Purus. Also, that the department of Loreto, which is by far the most extensive in area of the Peruvian departments, embracing five provinces, or states, includes the entire valleys of the Ucayali and the Huallaga, already referred to in THE INDIA RUBBER WORLD as prospective large producers of rubber.

THE next governor of the state of Pará is to be Dr. Paes de Carvalho, a leading citizen of Pará and a man of great ability. Add to this loyalty, patriotism, administrative talent, the *finesse* of a diplomat, and scrupulous honor—what more is wanting? In private life he is no less highly esteemed. His wife is equally well fitted for high position, being the daughter of a celebrated physician of this city, an accomplished and beautiful woman, and a fine linguist. The term of office of governor is six years and the annual salary 45,000 milreis.

I WAS reminded of the words "There is a tide in the affairs of men," etc., on hearing the other day a story of early rubber times here—early in the "fifties." An old-time friend of the Hon. Elisha S. Converse, Mr. Francis Moran, who was afterward a Brooklyn millionaire, was then a struggling young man, who had just come to Pará to take a position in the rubber-exporting house of E. S. Corning & Co. This house, by the way, is still in the trade, though under another name, and some day I hope to write its history in detail for the readers of THE INDIA RUBBER WORLD. At the particular time to which I refer the demand for India-rubber greatly exceeded the supply. All the expected canoes freighted with this precious commodity were behind time, and the trade was greatly inconvenienced. It was just when the export of Pará rubber in the form of shoes was coming to an end, and there were stocks of rubber here in that shape, from up the river, but they had become a drug on the market. Well, this rising young man was struck

with an idea that occurred to no one else, and bought all these old shoes for a song. Then he shipped them to Boston in lieu of the rubber that was wanted, and they proved to be of the best quality of fine Pará; the result being that he realized handsomely on his investment and laid the foundation of his fortune.

THEY are beginning to pay more attention to the rubber industry in the state of Maranhão. A small lot recently shipped to Liverpool sold there for about 1s. 2 4-5d. per pound. The trees abound near a place called Cará, distant by canoe about six days from the capital of the state.

For the first time since the Amazon was opened to navigation there has been a steamboat race in her waters. On May 3 the *Madeirense*, of the "Red Cross" line and the *Hubert*, of the Booth line, left Manáos for Pará. The *Hubert* made the distance in 2 days and 9 hours, and her rival was but a little behind. This was the best time ever made between the two points.

I received lately from a rubber region on the upper Amazon, made of very dark rubber, an odd-shaped figure representing an Indian's idea of the American eagle, as derived from a description by an American traveler.

GRAO PARÁ.

Pará, Brazil, May 25, 1896.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The Brazilian vice-consul at Iquitos, Señor Hernandez, regards the situation there as one by no means without peril, and, in an *oficio* to the governor of Amazon state, has warned his excellency of the necessity of protecting—in view of the great and extending commerce (principally rubber) between that port and Pará and Manáos—Brazilian interests. In Loreto the revolutionary government has formed several companies armed with rifles; also a large number of launches, for Yurimaguas and other places in the interior. Iquitos is fortified by some old-fashioned cannon, a small number of troops, and a reliable authority lately arrived here from that port affirms that it could not support from want of provisions a blockade longer than two months. How all this, if not ending in a speedy and peaceful termination, will affect rubber interests in this their greatest mart time must show.

THE *Diario Oficial* of Pará publishes an *oficio* from the Brazilian legation at St. Petersburg, addressed to the governor of this state, Dr. Lauro Sodré, to the effect that, as the consumption of rubber in Russia is constantly increasing, it would be advantageous for the Pará and Amazon state governments to note this fact by doing all in favor of direct rubber imports to Russia, thus inaugurating a direct commerce.

MR. F. W. DUNBAR, Mr. Alden's agent in this city, will leave for New York with his family by the steamer *Origen* on the 18th.

The Amazon Steam Navigation Co. are now running a flotilla of thirty steamers on the Amazon river and its tributaries.

Of the state revenue for April, amounting to 387,362 milreis, no less than 269,832 milreis were derived from the 21-per-cent, duty on the export of rubber.

GRAO PARÁ.

Pará, Brazil, June 15, 1896.

ACCORDING to *L'Electricien* (Paris), the Amazon Telegraph Co. are entertaining the idea of extending the submarine cable now connecting Pará with Manáos up the river to Tabatinga, a government post near the Peruvian border. It has also been suggested that the line be extended to Barranca, on the Magdalena river, in Colombia, about fifty miles from Cartagena.

THE RETIREMENT OF PRESIDENT BANIGAN.

JOSEPH BANIGAN, having ceased to be president of the Woonsocket Rubber Co., is practically no longer in the rubber business, save in so far as there may be truth in the rumors that he is planning the establishment of a new factory. It is believed that he owns to-day only a few thousand shares of United States Rubber Co. stock, instead of his former very large holdings. Mr. Banigan was, it is true, re-elected a director of the United States Rubber Co. at the annual meeting held in May, but it was over his published protest, and there is no evidence of his having acted with the board since that date. On the contrary, it has been reported that his answer to the official notice of his re-election was a letter declining the position. He had already ceased to be a director in the National India Rubber Co., the Boston Rubber Co., and the Goodyear India Rubber Glove Manufacturing Co.—positions due to his connection with the United States Rubber Co.—and in the Marvel Rubber Co., of which he was one of the founders.

It was expected that the resignation of Mr. Banigan as president and director of the Woonsocket Rubber Co. would be tendered at the annual meeting of that company called for April 27, but no business was transacted at that time, the meeting being deferred until June 29. This meeting, by the way, has come to be a mere formality, for the purpose of preserving the corporate status of the company. The stockholders are now only nominally such, as the stock is owned and controlled by the United States Rubber Co., with the exception of a few shares credited on the books of the latter to a few gentlemen to enable them to hold annual meetings to elect directors and officers of the Woonsocket Rubber Co.

The reason why the Woonsocket election was postponed, it now appears, related to the winding up of certain accounts. When the Woonsocket company was acquired by the United States Rubber Co., three years ago, it was on the understanding that the stockholders of the former then of record should guarantee the book accounts of the company—said to have amounted at the time to some \$450,000. Business in rubber shoes was not particularly good in the year which followed, and an indebtedness of \$100,000 to \$150,000 remained. In order that this obligation might be wiped out, Mr. Banigan called a meeting of the former stockholders in the Woonsocket Rubber Co., which was held at the "Alice" mill at Woonsocket on June 26 last. The result was the appointment of a committee of three to see that the guaranty of the book accounts was fulfilled, the committee consisting of Mr. Banigan, James Tillinghast, and Frederick Cook. Following this came the postponed annual meeting of the company on June 29, at which time Mr. Banigan's connection with the company ceased.

At the latter meeting a new board of directors was elected, consisting of Colonel *Samuel P. Colt*, president of the National India Rubber Co., secretary of the United States Rubber Co., president of the Industrial Trust Co. (Providence, R. I.), president of the Eagle National Bank (Bristol, R. I.), and an officer of several other corporations; *Fred. C. Sayles*, president of the W. F. & F. C. Sayles Manufacturing Co. (Pawtucket, R. I.); *Hezekiah Conant*, president of the Conant Thread Co. (Pawtucket, R. I.), and of the American branch of the J. & P. Coats Thread Co.; *George A. Lewis*, president of the Goodyear's Metallic Rubber Shoe Co. (Naugatuck, Conn.); and *Emmett A. Saunders* (New Haven, Conn.), general superintendent of the United States Rubber Co. The election of officers resulted:

SAMUEL POMEROY COLT, president.
FREDERICK COOK, treasurer (re-elected).
CLARENCE H. GUILD (of Providence), secretary.
EMMETT A. SAUNDERS, general manager.

It is anticipated that many changes at the works will take place after the new officers are installed, but of course all this is a matter of rumor. It is no secret that the long period of inactivity last winter at the factories of the Woonsocket Rubber Co. was resented by Mr. Banigan, and one of his last known official acts, as president of the company, was to give orders for the resumption of work, after attending in New York a meeting of the directors of the United States Rubber Co. In connection with the retirement of Mr. Banigan from the rubber industry is to be mentioned that of members of his family who have been in prominent positions: John J. Banigan, as general manager of the Woonsocket Rubber Co.; William B. Banigan, general manager of the Marvel Rubber Co.; William B. McElroy, freight agent for the Woonsocket company; and Dr. James E. Sullivan, its purchasing-agent. The first two are sons of Mr. Banigan and the last two sons-in-law. Many of the rumors current as to the future movement of ex-President Banigan involve the suggestion that, while at his time of life he might not care again to become actively engaged in the building up of a new factory for his individual benefit, he might do so to assist the members of his family.

THE latest and most definite rumor respecting Mr. Banigan's doings is that he has purchased the Saxon mill property, at Olneyville, near Providence, R. I., from Charles Fletcher, for \$125,000, and that he has given orders to a Providence contractor named Clark for the conversion of the plant into a rubber factory in the shortest possible time. But on the date of the publication of such a report in one of the leading Boston newspapers, another leading paper there published a Providence despatch asserting "upon authority which is beyond any question" that Mr. Banigan had not purchased any mill property in any state for the purpose of making rubber goods in competition with the United States Rubber Co. "All sorts, sizes, and conditions of mills have been offered to him at very reasonable prices," the despatch concluded, "and some of the property he has personally inspected; but nothing has yet materialized out of the proffers to sell."

IF the city of Woonsocket, R. I., says a local newspaper, adheres to its agreement in regard to exempting the property of the Woonsocket Rubber Co. from taxation for a term of fifteen years, the city will have paid something like \$150,000 for the benefit of having the "Alice" mill located within its limits. The agreement was that the Woonsocket Rubber Co. should not be taxed on more than \$100,000 worth of property, on old and new plants together. The result is not only to entirely exempt the "Alice" mill, but to reduce the taxes on the old works on South Main street. The property of the company was last assessed at \$550,952.15, but the board of aldermen, as in former years, voted to exempt from taxation all in excess of \$100,000, which caused a saving to the company of \$6313.30. Multiply this amount by 15, says the newspaper referred to, and add the interest, and the total will not be far from \$150,000.

During the unprecedented period of depression in the Woonsocket industries last winter, when the overseer of the poor was at one time assisting in the support of over 700 people who ordinarily are dependent upon employment in the rubber and

other mills, it was strongly hinted that the factory companies had by far the better end of the bargain. It was also urged in some quarters that, in return for their exemption from taxation, the factories should guarantee work for their employes all year. But now that the working class is busy again, the city authorities seem to have had a new access of liberality, since at the last town meeting it was voted to extend the tax-exemption privilege to any manufacturing corporations that might locate in the town during the current year.

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AFFAIRS OF THE UNITED STATES RUBBER CO.

At a meeting of the directors of the United States Rubber Co., held at the New York offices of the company on June 10, a semi-annual dividend of 4 per cent. was declared upon the preferred stock, payable on July 15 to stockholders of record at the closing of the transfer books at the close of business on Saturday, June 27. The books will be reopened at the opening of business on Thursday, July 16. The amount to be distributed is \$776,020.

At the same meeting the annual election of officers of the company was held, with the following result:

ROBERT D. EVANS, president and general-manager.
JAMES B. FORD, vice-president.
CHARLES R. FLINT, treasurer.
SAMUEL P. COLT, secretary.
MAHLON C. MARTIN, assistant treasurer.
EMMETT A. SAUNDERS, assistant general-manager.
CHARLES L. JOHNSON, director of sales.

The only change to be noted is in the separation of the work hitherto performed by Mr. Johnson, as secretary and director of sales, and the election of Colonel Colt as secretary. The executive committee elected consists of Robert D. Evans, Charles R. Flint, Samuel P. Colt, Mahlon C. Martin, Henry C. Hotchkiss, and James B. Ford.

At the monthly meeting of directors of the United States Rubber Co. for July the resignation of Mr. Martin as assistant treasurer was accepted, and H. M. Sadler, Jr., formerly credit clerk of the company, was elected to succeed him. Mr. Martin had been assistant-treasurer since the organization of the company in 1893. Before that he was the principal stockholder in the Jersey Rubber Shoe Co., which is now the principal factory of the United States Rubber Co. in New Jersey.

The following is a record of sales of shares of the United States Rubber Co. on the New York Stock Exchange, with the prices quoted, for two months past:

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
May 4-9.....	12,667	26	21½	3,004	84½	75
May 11-16.....	2,360	24½	23	900	80½	79
May 18-23.....	5,015	25½	23½	2,414	84½	79½
May 25-30.....	4,918	24½	20	2,241	84½	80½
May 31-June 6.....	1,253	22	21½	768	82	80
June 8-13.....	4,516	21½	18½	2,854	83	79½
June 15-20.....	6,217	21	18½	3,608	80½	77½
June 22-27.....	1,265	19	17	893	79	73½

There has subsequently been a decline, a quotation of 14¼ having been reported for "common."

ADVANCE IN GERMAN RUBBER GOODS.

UNDER date of May 31 a circular was issued over the signature of some of the leading rubber-manufacturers in Germany, relative to an advance in prices of their products to take place on July 1. This action is stated by the signatory firms to be unavoidable, "on account of the advance in prices

of crude rubber, and of nearly every fabric and material necessary in our [their] manufactures, which has occurred during the past few months." It is announced that the advance will amount at least to 5 per cent. for all goods invoiced up to 4 marks per kilogram, and 10 per cent. on goods invoiced at a higher rate. This arrangement embraces mechanical goods, soft rubber goods generally, and waterproofed stuffs.

Among the signers of this circular are the United Rubber-Goods Factories of Harburg-Vienna (formerly Menier-J. N. Reithoffer); Continental Caoutchouc and Gutta Percha Co., Hanover; Hanover Caoutchouc, Gutta-Percha, and Telegraph-Works Co.; Saxony-Bohemian Rubber Goods Factory Co., Limited, Dresden; C. Schwanitz & Co., Berlin; Munden-Hildesheimer Rubber-Goods Factory Co., Limited (Wetzell Brothers); Hanover Rubber-Goods Factory Co., Linden; Lange & Pohler, Arnstadt; S. Herz, Berlin; Glaser & Gross, Berlin; Metzeler & Co., Munich; Franz Clouth, Cologne; Wilhelm Pahl, Dortmund; Cologne Rubber-Goods Factory (formerly Ferd. Kohlstadt & Co.).

FIRST RUBBER STATISTICS FROM BOLIVIA.

FROM an official publication by the Bolivian government, lately received by THE INDIA RUBBER WORLD from Sucre, has been compiled the following table of the quantity of India-rubber, in pounds, exported during a period of practically one year through the custom-house at Villa Bella, situated at the mouth of the river Beni. Here are recorded all exports from Bolivia by the water route. Of late some India-rubber has gone overland to the Pacific, but the principal output is still floated over the falls of the Maderia, going thence by steamer to Pará. The figures which follow are given in such detail for the reason that they afford the first authentic information which has been published in regard to the amount of India-rubber actually exported from Bolivia:

MONTHS.	Fine Rubber	Coarse.	Total.
May 16-31, 1893.....	4,791	2,155	6,946
June.....	90,246	862	91,108
July.....	248,202	12,219	260,421
August.....	64,921	9,785	74,706
September.....	224,981	27,479	252,460
October.....	149,109	17,796	166,905
November.....	49,458	.....	49,458
December.....	131,110	7,656	138,766
January, 1894.....	204,625	13,385	218,010
February.....	98,155	28,595	126,750
March.....	139,739	11,737	151,476
April.....	16,731	94,631	111,362
Totals.....	1,422,068	226,300	1,648,368

Considering the comparatively recent origin of the rubber trade of Bolivia and the gigantic obstructions to navigation in the only waterways open to that country, this showing may be said to mark a very creditable degree of progress. Besides, there is reason to suppose that the Bolivian rubber output has continued to grow since the date of the figures printed above. It may be of interest to note that, in the custom-house classification, more than 86 per cent. of the total quantity is recorded as fine rubber, whereas not over 60 per cent. of all the rubber passing Pará is classed as fine. It will be remembered, by the way, that the Bolivian product, in common with all other rubber shipped via Pará, is taken account of in the statistics of the trade of that port.

THE freight tariff announced for the Congo railway, for the 118 miles operated between Tumba and Matadi, includes the item of \$38.80 per metric ton for India-rubber—equivalent to \$35.12 per ton of 2000 pounds.

RUBBER PRICES AND THE INSULATED-WIRE TRADE.

THE insulated-wire trade, in this country at least, does not share the opinion of rubber-brokers and others who have intimated to THE INDIA RUBBER WORLD of late that one cause of the high price of rubber is the increasing use of that commodity in the electrical industries. As for the facts in the case, the last rise in rubber was sudden and marked, after an unusually long period free from fluctuations, whereas there is nowhere any indication of a corresponding sudden and great development in the insulated-wire industry. Indeed, no one who is interested in the latter, among the number interviewed for THE INDIA RUBBER WORLD, seems disposed to take an optimistic view of the situation. The highest prices for rubber within several years past, happening at a time when competition in the wire trade has cut down prices of the manufactured product 25 to 40 per cent., are not calculated to render the electrical trades better pleased than the producers of mechanical goods or footwear would be under similar circumstances. Moreover, it is asserted that the insulated-wire business has been overdone.

"When we began in the trade a dozen years ago," said the manager of one company, "we had few competitors, with a constantly and rapidly growing demand. To-day there are eighteen concerns in the United States using more or less rubber in the insulation of wire for electrical purposes, and the productive capacity has increased more rapidly than the demand for wire. If one-half of those concerns were to retire from the trade the business of those remaining would be in a much more healthful condition. The demand for wire is most largely from the electric-lighting field, and, secondly, from the street-railway systems, and beyond these there is little to be said. Both these departments have now been developed so generally throughout the country that the manufacturers must look, for future orders, to the extension of existing plants rather than to the installation of important new ones. It would be some better for us if electric-lighting should become the universal medium of illumination in city houses; and yet even that would have its drawbacks. Only the better class of buildings, in the natural order of things, would be fitted with good wiring, while for the tenements and cheaper dwellings a very poor class of material would be bought, and a growth of business of this kind is not desirable. The situation here was correctly forecasted four years ago, when the representative of a large English concern, engaged in the electrical-supply business for thirty years past, came to the United States to prospect for the opening of a branch establishment. He reported to his company that the business in America was already becoming overdone, and that they would do better to be content with the existing volume of their business than to enlarge it without a corresponding addition to their profits."

In answer to the general question whether more rubber had probably been used in insulation work during the past year than during the preceding year, the manager of another company said:

"I am unable to express an opinion on this point, but I do know that, on account of the cutting of prices due to competition among manufacturers, a much larger volume of production than formerly is now necessary to make the same showing of value. There are various substitutes for rubber in use for insulation, but while it would not be becoming for me to speak of our competitors, I may say that none of the concerns at any time using rubber has given up that use."

The last speaker mentioned 25 per cent. as the reduction in prices which had taken place within the last two years, but still another member of the trade said that sales of what purported to be rubber-insulated wire had been made at 40 to 50 per cent. less than in the recent past.

"The effect of such a reduction upon the quality of goods," he said, "suggests itself to every mind. There is a limit in cutting prices below which manufacturers cannot go without either sacrificing all profits, or substituting poor materials and workmanship."

Yet it must not be taken for granted that anybody in the trade has ceased to look for orders, though there must be some independence left among the manufacturers, since one of them mentioned an order for \$30,000 worth of material from a western town which went to a rival concern—not using rubber—because he refused to concede all that was asked from his firm in respect to prices.

The experience of the Western Union Telegraph Co. might reasonably be expected to afford a test of the comparative merits of the various forms of insulation for electrical wires, but, on account of the fact that every form of insulation now in the market is in use by this company, no one manufacturer can point to them for a special commendation for his product. At New York the Western Union company have about a hundred cables under the Hudson and five or ten under the East river, ranging in size from seven to ten conductors, but mostly of the latter size. A few of these cables are of Gutta-percha and were imported from England; the others are of "okonite," "kerite," and the other forms of insulation of which India-rubber is the base. The wires of the company crossing the Harlem river, instead of being embraced in cables, are drawn through submerged pipes—with a capacity for about 100 wires each—which the company have found more satisfactory for crossing narrow streams than submarine cables. There are also some very large cables across the East river, supported by the big New York and Brooklyn bridge. The company's extensive system of underground wires in New York gives employment to an equally great variety of insulation materials and compounds, chosen in each instance for the peculiar requirements. There are portions of the city where underground wires are liable to exposure to a high degree of heat, and here India-rubber has not always proved satisfactory, whereas, in locations in which there is an excess of moisture underground the electrician carefully avoids the employment of paper. By the way, the company's experts have a high regard for the insulating properties of paper, under favorable circumstances, and some paper-covered wires have been in satisfactory use by the company for five years. It is inferred from statements made by an official of the company that, while results of a high order have been obtained from the use of paper-insulated wires, they would not care to depend, for communication between any two points, solely upon a paper cable. The Western Union's system of wires, by the way, does not embrace all that cross the rivers surrounding New York city. As many more cables are owned by the telephone companies, whose wires are laid in pairs, owing to the necessity, in modern telephone practice, of having metallic instead of ground circuits. There are also some Gutta-percha cables under the North river in the service of the United States government. The cable-boat *Western Union*, belonging to the great telegraph company, has laid most of the cables under these rivers, together with many others elsewhere.

It does not appear that the export of insulated wire from the United States has yet attained important proportions, although very large shipments of such goods are made annually from Great Britain. No separate heading for insulated wire and cables is made in the official statistical returns emanating from Washington, but a record is kept of the exports of "electrical material" and "wire," either or both of which might be supposed to include insulated wires. During the last week in June

the exports of electrical material from New York alone were of the declared value of \$46,316, going to China, Japan, Brazil, and various points in Europe. But these figures most probably related to apparatus and not to wiring, our engines for electrical use being favorably regarded in all parts of the world. Whenever an engine has packed with it even a small quantity of electrical appliances the whole is likely to be classed as "electrical material" in the export returns.

REVIEW OF THE TRADE IN RUBBER FOOTWEAR.

LITTLE activity has been displayed so far this season in the rubber-shoe industry. To begin with, the factories of the Boston Rubber Co. are idle, reducing considerably the productive capacity of the shoe interest as compared with last year. At least one large concern, after having run on reduced capacity from the beginning of the season, is giving its employes a vacation already, and, so far as can be learned, most of the other factories are not being run on full capacity. This lack of activity, taken in connection with the fact that the mills generally did not begin operations promptly on April 1, as usual, is evidence that the demand from the trade is later than usual in development.

There are two reasons why dealers should be ordering sparingly as compared with last year—the existence in some hands of stocks of left-over goods, and the withdrawal of the extra 5-per-cent. discount which formerly offered an inducement for early buying. As for the size of stocks, opinions differ. A recent incident in the New York city trade would serve to show that, however "open" the winter was for the most part, the inclement weather toward the end of the season pretty generally wiped out stocks of rubbers in this vicinity. The incident referred to was a week of cool, rainy weather in June, which led to considerable sales of rubbers, not only by retailers, but by jobbers as well. One jobber reports the sale during this period of about \$6000 worth of rubbers to the city trade alone, indicating that retailers were short of light goods, at least. As for the country at large, doubtless the size of stocks in different centers differs, giving rise to a variety of opinions as to the extent to which the rubbers ordered last season were sold out. It seems certain that the demand for boots and lumbermen's goods was generally light during the winter, as compared with average years, and that stocks of these goods were carried over by many dealers.

"As for the extra discount of 5 per cent.," said one jobber, "it is the truth that on account of its withdrawal orders for rubbers have been coming in more slowly this season than last, but I do not doubt that the year, taken as a whole, will show quite as large a volume of trade as any year during which the extra discount was operative. That the offer of this inducement for early buying was a mistake, I have believed from the beginning. No doubt very many dealers were induced, by the prospect of making an extra 5 per cent., to order too liberally, and without due consideration of their ability to meet their bills. Where they made sales promptly they were all right, but the first slow season found them in difficulties. The fact is that they were gambling on the money of the jobbers, who are carrying their accounts now because last winter happened to be a poor one for the sale of rubbers. I suppose that I have on my books now 200 accounts with retailers which I am obliged to carry solely for the reason I have given, and, as they average about \$500 each, you can see why I have not regarded the extra discount as a wise measure."

One other probable element which has led dealers to hesi-

tate in placing their orders has a bearing upon styles. The proper width of toes remains an uncertain quantity both in leather and in rubber shoes. A prominent leather-shoe house has already sent out, during this season, three different sets of samples. The first did not seem to meet the prevalent demand for narrower toes, and shoes more pointed were designed. Even these proved too conservative in style for the craze then at its zenith in the trade, and a third set of samples was distributed. But now the firm think that the limit has been reached, and that signs are discoverable of a return to wider toes. When the leather-shoe men are at sea about the proper width of toes there can be no more certainty on the part of the rubber men, who have no voice in the making of styles, but must content themselves with the production of rubbers that will "fit any shoe."

As the rubber-shoe industry is now systematized, the manufacture of goods being confined mainly to detailed orders, the factories would not be found stocked up with unsalable goods in the case of a sudden or unexpected change of fashion; they would only be inconvenienced by the necessity of suddenly changing their patterns, dies, and lasts, and put to extra expense in purchasing new outfits. The loss in the way of having left over stocks would fall upon dealers and jobbers, and naturally these classes exercise unusual caution, at a time when changes in style are feared, in detailing orders.

With regard to styles in rubbers in general, the season cannot be said to have brought out anything new. The selling-agents for each of several factories say that, aside from the tendency toward narrower toes, last year's samples would have served equally well for this year's trade. But while practically nothing new has been offered—again excepting more pointed toes—several omissions have been made from the catalogues. Formerly, when all the manufacturers were working independently, and each striving in every way to attract trade, a great number of so called different styles came into existence, although the difference in many cases was so insignificant that the present management of the United States Rubber Co. consider it not worth while to continue the expense of maintaining an equipment for producing all of them. The tendency, therefore, is toward consolidation of the lists of styles, confining the manufacture to a comparatively few standard lines. It is believed that a shoe cut only a quarter of an inch higher or lower, or wider or narrower than another, is not apt to strike the average wearer as constituting a different style, and is not worthy of being so considered.

THE exports of India-rubber from British North Borneo in 1895 were valued at \$13,670 (silver) more than in the preceding year, and the exports of Gutta-percha were greater in value by \$16,187. The British North Borneo Co., who last year for the first time realized a profit from their business, anticipate an important increase in the output of both gums as a result of the work of development now in progress.

RUBBER-GOODS EXPORTS FROM NEW YORK.

EXPORTS of merchandise listed as "India-Rubber Goods" were made from the port of New York during the quarter ended June 30, 1896, as shown by the table below. Usually 60 per cent. of the total imports of rubber goods from the United States are made from New York. The treasury statistics do not specify under this heading many classes of goods containing more or less India-rubber. The table follows:

COUNTRIES.	Value.	COUNTRIES.	Value.
Austria-Hungary.....	\$ 100	West Indies—S. D'mingo.....	\$ 154
Belgium.....	3,826	Argentina.....	795
Denmark.....	615	Bolivia.....	544
France.....	7,866	Brazil.....	1,412
Germany.....	29,922	British Guiana.....	25
Great Britain.....	26,002	Chile.....	1,494
Holland.....	6,025	Colombia.....	2,724
Italy.....	7,684	Ecuador.....	1,143
Norway.....	371	Peru.....	1,269
Portugal.....	216	Uruguay.....	349
Russia.....	20	Venezuela.....	1,037
Spain.....	40	Africa—British.....	5,484
Switzerland.....	647	Portuguese.....	12
Turkey.....	590	China.....	822
British North America.....	492	Japan.....	7,697
Mexico.....	7,265	British East Indies.....	128
Central America.....	3,688	Australia.....	7,714
West Indies—British.....	1,367	New Zealand.....	1,159
Danish.....	95	Tasmania.....	17
Dutch.....	20		
Spanish.....	4,431	Total.....	\$135,630
Hayti.....	370		

Exports of crude India-rubber from the port of New York for the three months ending June 30 were of the declared values given below, not including some small items of Gutta-percha:

To—	Value.	To—	Value.
Liverpool.....	\$100,475	Nova Scotia.....	\$ 40
London.....	18,190	Mexico.....	22
Glasgow.....	21,640	Central America.....	89
Southampton.....	1,015	Cuba.....	296
Belfast.....	200	Argentina.....	56
Havre.....	47,375	Venezuela.....	20
Rotterdam.....	12,560	Japan.....	673
Hamburg.....	20,701	Australia.....	44
Antwerp.....	500		
Newfoundland.....	337	Total.....	\$226,223

There were exports of India-rubber scrap as follows: To London, \$2356; to Liverpool, \$3961; to Glasgow, \$23,629; to Havre, \$3318; to Bremen, \$2400; to Rotterdam, \$705; to Berlin, \$930; to Genoa, \$1400; to Japan, \$487; total, \$38,986.

Some other items were a shipment of India-rubber thread to Hamburg, valued at \$3140, and one to Rotterdam valued at \$4000. Exports of India-rubber cement during June amounted to \$1500. Exports of Chicle are beginning to be made from New York. One consignment to Liverpool was valued at \$1890. Exports of dress-shields during June amounted to \$14,575, and in April to \$24,119.

THE AMAZON RUBBER-CARRYING FLEET.

AT the twenty-fourth annual meeting of the shareholders of the Amazon Steam Navigation Co., Limited, held at the Cannon Street Hotel, London, on June 24, the company's accounts were submitted for the year 1895. An *interim* dividend of 3 per cent. having been paid in January last, it was proposed and voted to pay a final dividend of 3 per cent., making 6 per cent. for the year, or a distribution of £30,314 5s. Since 1887 the annual dividends have averaged 7 per cent. This year, besides paying a smaller dividend, the company have carried forward to the profit and loss account of 1896 only £4696 15s. 2d., against £25,981 10s. 11d. brought forward at the beginning of 1895.

Adequate provision has been made for depreciation, however, and the insurance and reserve funds remain intact at £100,000 and £75,000 respectively. The capital of the company is £625,000, of which shares have been issued to the amount of £505,237 10s.

The company's renewed contract with the federal government of Brazil, signed on August 1, 1895, to remain in force ten years, is similar to the preceding contracts, and is based on the same subsidy—421,200 milreis per year—but it involves an additional number of voyages on the Madeira and Purús rivers. Permission is accorded to the company to increase freight and passenger rates 30 and 25 per cent. respectively. The delay in the renewal of this contract placed the company at a disadvantage in that it retarded the needed extension of their fleet. For a like reason the number of steamers built by private firms and competing with the company has greatly increased. The general trade of the Amazon, however, continues to show increased development year by year, and the company hastened, upon the renewal of their subsidy, to largely reinforce their fleet. They have thus to announce the addition of nine steamers, several of which have been described already in THE INDIA RUBBER WORLD.

BAILEY'S BRONZE MEDAL.

M R. C. J. BAILEY, the well known Boston inventor of rubber specialties, has just been granted a beautiful bronze medal and diploma which are on exhibition in his show window. These awards are for an improved ribbed device for the prevention of the breaking at the heel of rubber shoes,



and for a variety of styles of rubber specialties all of which were shown at the World's Fair. Says the *Boston Herald*, speaking of the above and of Bailey's later inventions:

"Two of the newest 'happy thoughts' of this famous inventor, which have just been patented and will be placed upon

the market this year, are the 'Cling-tight' foothold for both ladies and gentlemen, a tiny overshoe which fastens with a strip of elastic rubber across the instep, dispensing with the back strap, which upon other makes wears out fine kid shoes so badly. This new holdfast can be carried easily in the pocket and fastens simply with a snap stud across the instep. The second is the rubber eye-glass guard, which prevents that uncomfortable pinching and disfigurement. It is like a strip of tiny rubber cups, which holds the glasses on securely, yet allows perfect ventilation and does not retard the circulation.

The American Optical Co., of Southbridge, Mass., has taken the entire output and will use it on all grades of their manufacture for the life of the patents in the United States and Canada."



RUBBER AND THE CONGO RAILWAY.

LAST year showed a considerable increase in the output of Congo rubber, though not maintaining the rapid rate of increase which had previously prevailed. The latest official report of the secretary of state enables us to offer the following comparison of exports by years, the figures relating to pounds:

	Congo Free State.	Whole Congo Basin.
In 1893.....	531,646	724,027
In 1894.....	1,012,878	1,393,731
In 1895.....	1,268,337	1,406,543

Various troubles in the rubber district during the earlier part of the past year probably had an influence in decreasing the output, since the quantity of rubber exported in the first half was much smaller than in the second half of the year. The figures for the Congo basin were 606,509 pounds from January to June, inclusive, and 800,034 pounds for the months of July to December. The total value of the movement for the year was \$639,362, forming 26½ per cent. of the total value of exports from the Congo river. India-rubber is still second in importance among exports from that section, ivory remaining first.

Liberal receipts of Congo rubber have been reported from Antwerp during part of the present year. On May 14 a single steamer reached that port from the Congo having on board 187,000 pounds of rubber—the largest cargo yet recorded. A steamer which arrived on April 7 carried 147,400 pounds of Congo rubber.

Steady progress continues to be reported in the construction of the Congo railway, on which, by May 10, the rails had been laid over a distance of 113 miles, in addition to which the earth-work had been completed for a greater distance. It was expected on July 1 to open a station at Tumba, 117 miles from Matadi. Begun in 1890, the progress of construction has been as follows:

	Miles.		Miles.
To June 1, 1891....	1½	To June 1, 1894....	31½
To June 1, 1892.....	5¼	To June 1, 1895....	64
To June 1, 1893.....	18	To May 10, 1896.....	113

The more rapid progress of late is due to the fact that the work has advanced beyond the most difficult portion. It has

been estimated that one-third of the labor and money required for the whole enterprise was expended upon the first twenty-five miles, although the total projected length is 268 miles. There is already considerable traffic on the line, the report for 1895 showing the carriage of 5306 passengers and 2751 tons of freight, and traffic receipts of \$101,332. In addition the trains have been employed in the transportation of laborers and construction material. On the whole, the hope appears well founded that the railway will be pushed forward to completion. At present a ton of cargo, which can be transported from London to the lower terminus of the Congo railway for \$10, costs \$250 for portage to the point at which the road is to connect again with the river. The expected great saving in freights, together with the increase of traffic hoped for, insures the provision of all the capital needed for the railway.

CARRIAGE CLOTH AND BICYCLES.

IT is claimed that the carriage manufacturers have suffered somewhat severely because their business has dropped off as a consequence of the bicycle trade. It is interesting to note however in this connection that the advent of the bicycle has really increased the trade in rubber carriage cloth. A manufacturer of these goods recently said, "it is marvelous how many people, instead of buying new carriages have had old ones fixed up, and have put their extra money into bicycles. This directly helps the carriage cloth trade, because in re-covering carriages, rubber cloth is almost always put on in place of leather. This is because the rubber cloth is cheaper, and one never likes to spend more money than is necessary on repair work. Then too rubber look as well as leather and lasts several years, indeed probably as long as the carriage will. By the way, physicians are almost a unit in wanting their carriages rubber covered. Their vehicles get hard usage however, and many of them have to be covered every two or three years. If only prices were right on carriage cloth and the foolish price cutting that has been indulged in during the last few years were done away with the drill men would feel very cheerful."

TRADE AND PERSONAL NOTES.

COUPONS due July 1 on the first-mortgage gold bonds of the Mechanical Rubber Co., and coupons due July 1 on the 6-per-cent. mortgage-debenture bonds of the New York Belting and Packing Co., Limited, were paid as usual at the offices of the Knickerbocker Trust Co., in New York.

=The I. B. Kleinert Rubber Co. (College Point, L. I.) gave their employes a steamboat excursion up the Hudson on June 27.

=It is reported that work has increased at the works of The L. Candee & Co. (New Haven, Conn.), and that the employes feel assured of steady running throughout the summer.

=The rubber-shoe department of the National India Rubber Co. (Bristol, R. I.) was closed on June 27, but it was not expected that the machinery would remain idle longer than two weeks. The production of footwear there had been upwards of 13,000 pairs daily for two months or more. Meanwhile the orders for druggists' sundries, belting, and insulated wire are plentiful, and the different departments are in active operation.

=J. Oliver Stokes, president of the Home Rubber Co., with his family, has left Trenton for the summer, which they will spend in the Catskill mountains.

=William Metzler, superintendent of the tire department of the Eastern Rubber Manufacturing Co., has resigned to accept a similar position with the Empire Rubber Manufacturing Co., also of Trenton.

=Welling G. Sickel, of the United Rubber Co., of Trenton, is spending the summer in Europe.

=The Globe Rubber Co. (Trenton, N. J.) are just completing a new brick office-building which was necessitated by their having to give up their old ones to the use of the factory.

=The Whitehead Brothers Rubber Co. (Trenton, N. J.) are contemplating the erection of an addition to be used for the manufacture of tires, their rapidly growing trade in this line having outgrown their present quarters.

=The Eastern Rubber Manufacturing Co. are about completing the installation of a rubber reclaiming plant, under the supervision of W. R. Blowen, the company's superintendent.

=The Home Rubber Co. are working on one of the largest orders for belts ever placed in Trenton. Their belt-makers are employed fifteen hours a day.

=Mr. A. Randolph, recently returned from Europe, has opened an office at 11 Kingston street, Boston, which will be his headquarters for the present.

=A magnificent office building in the process of erection in Providence, R. I., is to be known as the Banigan Building as it is the property of Mr. Joseph Banigan. It is centrally located and will undoubtedly be a profitable venture.

=G. D. Rice, in a recent number of the *Iron Age*, talks to some length on the lacing of rubber belts. The matter is of interest, but the reader if at all familiar with the subject cannot but remember that the pioneer writer on this subject, and one who treated it most intelligently and exhaustively was Mr. James Bennett Forsyth, of the Boston Belting Co.

=John Royle & Sons, Paterson, N. J., who are well known manufacturers of tubing machines of all kinds, have prepared a table, covering the sizes of the dies used and enabling one to produce any given size of rubber tubing. This is we believe the first step in bringing about a system of standard sizes, and should receive the most cordial support of the whole trade.

=Geo. Watkinson enjoys a joke whether it be on himself or on some one else, and in this connection the following incident is illustrative. When his new factory in Philadelphia was completed outwardly, he decided to have it photographed. He therefore borrowed a camera, took snap shots from half a dozen different positions, even climbing flights of stairs in the adjoining buildings to cover all points of view; personally carried the camera to a photographer, paid him in advance for reproducing the pictures, and, learned the day following that the camera was entirely empty of plates.

=A new narrow tread pneumatic tire, that can describe an eight-foot circle on an asphalt pavement without slipping, and that can not be punctured no matter what it is ridden over, has recently been brought out in London. The secret of the toughened cover is said to be due to very slow vulcanization.

=The Home Rubber Co. (Trenton, N. J.) are out with a very fine lithograph of their plant showing its new buildings and recent extensive improvements.

=The Akron India-rubber Works (Akron, Ohio) are manufacturing the Flexible Rubber Blackboard for the Flexible Rubber Blackboard Mfg. Co., of the same city.

=The World Mfg. Co., 80 Reade street, New York, have taken a general agency for the Shaum & Uhlinger Adjustable Wood Handle Bar.

=A new all white yachting shoe with a white rubber sole made by the National India Rubber Co., is a very popular seller this summer.

=The manufacturers' agency of the Singer Mfg. Co., is at 561 Broadway, New York, and not at 385 as recently stated in their advertisement.

=Mr. W. T. Baird, of the New York Belting & Packing Co., was recently elected Treasurer of the Mechanical Rubber Co.

=The Reading Rubber Tire Co. are said to be selling quantities of their Alligator Tread Tire in Europe.

=That the Davidson Rubber Co. (Boston) still suit the market with the high grade goods is shown by the fact that the sales of their patent safety nipples are 1200 gross a year.

=A recent number of the *American Wheelman* has an article on the making of pneumatic tires, profusely illustrated, and while it is evidently written by one not thoroughly familiar with rubber manufacture, is a very creditable effort.

=The Harvey brothers on their recent tandem trip from New York to Chicago, rode almost the entire distance on Vim tires, which were not pumped up a second time, and which came through without mishap of any kind.

=Hon. L. D. Apsley, proprietor of the Apsley Rubber Co. (Hudson, Mass.), was widely quoted in the newspapers the country over recently, as favoring McKinley for president and Reed for second place.

=A recent meeting of the tire manufacturers who do not believe in becoming licensees of the Tillinghast Patents held at the Astor House was attended by representatives from three concerns. No newspaper men were present and the proceedings were kept secret.

=Col. Theo. A. Dodge, advises THE INDIA RUBBER WORLD that he has brought suit in the United States Circuit Court of Massachusetts against one infringing tire manufacturer, and that he has bills in equity pending against others which will be vigorously pushed.

=A feature of a recent advertisement of the Indiana Bicycle Co., Indianapolis, Ind., is a picture of their mill room, showing the grinders and calenders and also a part of their tire department.

=Mr. Pitt Barrows, selling agent for the Bloomingdale Soft Rubber Works, seems to have made quite a record in Chicago by securing an injunction against the reorganization of the Chicago Gas Trust.

=Mr. Richard F. Sears, of R. F. Sears & Co., New York and Pará, returned recently after a year's absence in Brazil. His place at the Pará office of the firm will be taken for several months to come by his partner, Mr. Edward Backus.

=Mr. Arthur Meyer, of Reimers & Meyer, has been seriously ill at his residence in New York since May 30, his illness of late taking the form of typhoid fever. Mr. Hermann Reimers, the senior member of the firm, returned to New York in response to a cablegram in regard to Mr. Meyer's condition, arriving on July 8, considerably in advance of the original date fixed for ending his vacation in Europe.

=Mr. William A. De Long, of the New York Commercial Co., whose departure for Europe was reported recently in THE INDIA RUBBER WORLD went with the intention of making a long stay. He suddenly terminated his visit, however, on account of his health, and is again at his business post.

=The Indianapolis Rubber Co. (Indianapolis, Ind.) have obtained a permit for the erection of an addition to their factory, to cost \$2500.

=The Gutta-Percha and Rubber Manufacturing Co. have petitioned one of the Chicago courts for the appointment of a receiver for the Cycle Electric Light Co., of that city, of which they are creditors to a small amount. The defendant corporation had already confessed insolvency.

=Joseph Banigan, after his resignation as president and director of the Woonsocket Rubber Co., stated to a newspaper interviewer that he no longer owned a dollar's worth of stock in that company. His holdings of United States Rubber Co. stock are currently reported to consist of only 3000 shares of "common," bought on favorable terms on May 9.

=Willett Hemingway, a wealthy citizen of Fair Haven, Conn., who died on June 29 in his eighty-sixth year, was a large stockholder in The L. Candee & Co. before their absorption by the United States Rubber Co., and at the time of his death held the shares of the latter company received in exchange.

=The factories of the Metropolitan Rubber Co. and the New York Insulated Wire Co., at Wallingford, Conn., were closed on July 4, but resumed work on the Monday following, being too busy to give their employes a vacation longer than one day.

=The Boston Belting Co. have not taken out a license for the manufacture of a patented bicycle-tire, as was stated inadvertently in the last INDIA RUBBER WORLD.

=The Fossil Flour Co., whose story is told in another column, merit the warmest regard of the rubber trade in that they have stuck to it until they have succeeded in bringing out a perfect product and in quantities to suit the largest consumers. Another triumph for New England capital and pluck.

=The American Rubber Tire and Columbia Pneumatic Wagon Wheel Co. is the name under which the business is conducted in the city and state of New York of selling the Hartford tires for carriages. It combines with the tire business the wheel-manufacture of the Columbia Pneumatic Wagon Wheel Co. with factories at Oneida, N. Y., and an office at No. 131 West Thirty-eighth street, New York.

=William Morse & Co., rubber jobbers (New York), have lately distributed to the trade a handsome souvenir in the shape of an album of New York views, selected from "King's Handbook of New York," with the business of the firm attractively advertised on the covers. There are 140 excellent half-tone pictures, so arranged as to strikingly illustrate the recent development of the American metropolis, and forming a book not likely to be carelessly thrown aside.

Review of the India Rubber Market.

=The Lycoming Rubber Co. (Williamsport, Pa.) have appointed the Ver Steeg-Grant Shoe Co., of St. Louis, as their agents for the south and southwest.

=It is reported that work is and has been very brisk at the factory of the Fairfield Rubber Co. (Fairfield, Conn.) and that large quantities of carriage-cloth are being made and shipped, the western trade being especially good.

=The Easthampton Rubber Thread Co. (Easthampton, Mass.), at their annual meeting on June 16, re-elected the old board of directors—E. Thomas Sawyer, F. W. Pitcher, L. S. Stone, W. J. Bassett, and F. D. Ryder. Messrs. Sawyer and Pitcher were re-elected president and treasurer respectively. A dividend of 3 per cent. was declared, payable July 1. Some repairs have been made lately, including a new roof over the thread-room. During the month Joseph Ward, superintendent of the mill, took his first vacation during thirty years.

=Mr. and Mrs. John Strobel, of Cambridge, Mass., celebrated their golden wedding on June 17. They came to America in 1870, and since the fourth day after their arrival Mr. Strobel has worked uninterruptedly for the American Rubber Co. Many of the employés of the company joined in the celebration.

=Mr. A. J. Gordon, the London selling agent of the Boston Rubber Shoe Co., was a recent visitor to the United States.

=Mr. C. J. Bailey (Boston) has returned from a visit to his Western customers, and as usual with a lot of big orders for his rubber specialties.

=Mr. W. J. Kelley, whom all of the New England rubber manufacturers know and esteem, has given up the selling of crude rubber and becomes the manager of the Newton Rubber Works, at Newton Upper Falls, Mass.

=Mr. G. B. Widner, selling agent of the Pacific Rubber Works (New York), will return from a month's trip among his customers in the West on July 15th.

=Mr. Hamilton S. Lockwood, formerly with the New York Belting Co., has gone on the road for the Newton Rubber Works.

=Mr. Robert B. Baird has for a long time been one of the popular crude rubber salesmen for the New York Commercial Co., in and about New York. By the time this item is printed he will have become a Bostonian, as he takes the New England trade formerly handled by Mr. Wm. J. Kelley.

=Mr. J. O. Stokes, Treasurer of the Home Rubber Co. (Trenton), has removed to Belmar, one of the most charming shore resorts on the Jersey coast, for the summer.

=The Hartford Rubber Works Co. (Hartford, Conn.) have established a branch-house in Philadelphia, at No. 910 Filbert street, where a complete stock of tires will be kept together, with a repair department.

=The report widely circulated that Thos. Potter, Sons & Co., of Philadelphia, had discontinued the manufacture of rubber carriage cloth is entirely without foundation of fact.

=Mr. R. M. Howison, representing Sgal & Co., Liverpool, in crude rubber, has gone to Europe with a view of increasing his facilities for supplying the American trade.

=Earle Brothers, the India-rubber brokers (New York), have removed their offices from No. 150 Pearl street to the third floor of the Morris building, Nos. 64-66 Broad street. The new offices are also headquarters for the American Exploitation Co. —engaged in the Balata trade in Surinam—of which Joseph P. Earle is treasurer.

=The W. & P. Armored Tire Co. (Buffalo, N. Y.), incorporated last January with \$100,000 capital, have confessed judgment in favor of the Spaulding and Pepper Co. (Chicopee Falls, Mass.), who have increased their capital by \$50,000 and will continue the manufacture of the W. & P. tire.

=The Omo Manufacturing Co. (Middletown, Conn.) are devoting their attention to the manufacture of dress shields, which are advertised extensively as being "made without India-rubber or Gutta-percha," the explanation of which is that the goods are made impervious to moisture by the use of Balata. The advantage claimed for the use of the latter material is the absence of the rubber odor. The company named are successors to the late Middlesex Rubber Co.

=The retirement of A. Straus from the Newton Rubber Works (Newton Upper Falls, Mass.) is announced, dating from July 1. Mr. Straus will be found hereafter at No. 23 Park row, New York, in charge of the business of the Cycle Manufacturers' Supply Co.—dealers in chains, pedals, and hubs—and as a partner in the firm of Edward Oliver & Co., dealers in bicycles. He still controls the Straus tires.

=The India Rubber, Gutta-Percha, and Telegraph Works Co., Limited (Silvertown), have secured an important electrical contract from the Glasgow Subway Co. The current for the trains and stations will be supplied from the central station and conveyed through tunnels by means of highly-insulated India-rubber-covered cables.

=Mr. Harrison C. Frost has taken fine offices at 116 Bedford street, Boston, which he will make headquarters for his New England agencies in hard and soft rubber goods, etc., etc. Mr. Frost carries the mechanical goods of the Manhattan Rubber Mfg. Co., the hard rubber goods of the Goodyear Vulcanite Co., the Sawyer Belting Co.'s cotton belting, the Chas. Munson Belting Co.'s leather belting, the Rice Mfg. Co.'s steam and hydraulic packings, and the Salem Waste Co.'s line of cotton waste.

=B. B. Covert, superintendent of the Empire Rubber Mfg. Co., of Trenton, has been appointed a water commissioner of that city.

=Mr. Benj. F. Taft, the vice-president of the Rubber Manufacturers' Mutual Insurance Co. (Boston), recently told the editor of THE INDIA RUBBER WORLD that up to June first, 1896, his mutual companies had paid to the rubber and allied trades in dividends the tidy sum of \$2,222,219.20.

=The Vim Tire Welder, which was recently illustrated and described in THE INDIA RUBBER WORLD, has had a phenomenal sale, the repair men of the country having purchased already between 3000 to 4000 of them.

=Mr. C. Edw. Murray, treasurer of the Assanpink Rubber Co. (Trenton, N. J.), was one of the delegates at the recent Republican convention at St. Louis.

=Mr. J. Francis Hayward, treasurer of the Cable Rubber Co. (Boston), has just returned from a business trip that took him across the continent, and that lasted some three months.

=The Boston Woven Hose & Rubber Co. had a notable advertising device at the recent celebration of the Battle of Bunker Hill, held in Charlestown, Mass. This was a pair of wheels, certainly ten feet in diameter, which ran upon two enormous Vim Tires.

=The newspapers have it that Mr. Geo. H. Hood has purchased nine acres of land in Watertown, Mass., and begun the erection of a new factory. Mr. F. C. Hood, his son, in replying to an inquiry from THE INDIA RUBBER WORLD, states that his father has purchased no land at all in Watertown. At any rate the rumor persists that the Messrs. Hood are planning the establishment of a new rubber factory somewhere, not for the production of footwear, perhaps, but of tires and other rubber specialties.

=Mr. H. D. Goward, for a long time manager of C. A. Hayward's rubber store at Pawtucket, R. I., has severed his connection with that concern. Mr. Goward is shortly to engage in business for himself in Providence, in the manufacture of rubber specialties, and will also have a wholesale and retail store. He further plans to have an office in the city of Pawtucket, which will enable him to look after his trade throughout the whole section.

=Prof. W. Lascelles Scott, after spending six weeks in the United States, visiting important mills, and meeting prominent men in the trade, has returned to England.

=The recent selling price of United States Rubber "common" has been three points below the bottom price reached during the panic of 1893.

REVIEW OF THE INDIA RUBBER MARKET.

RUBBER has again advanced somewhat at Pará and elsewhere. As usual during a period of higher prices for crude gum, buying has been on a very limited scale since our last report. We have already pointed out, more than once, that the prices of rubber are never long maintained above a certain average figure, after which a decline is almost inevitable to a point below that average. It being the custom among the larger and long-established manufacturing concerns to buy ahead to a liberal extent, a heavy advance in prices usually finds them stocked with material to such an extent as to serve them until a decline comes. Consequently such sales as were made during the past two or three months were for the most part in a retail way—either for the temporary replenishment of stocks by the larger concerns, or for the current requirements of parties lacking either in experience or in the financial position necessary to enable them to buy advantageously and in season.

At the same time, it may be mentioned that the recent experience of one firm in making numerous sales of small lots has suggested to their salesmen that it might be good policy to encourage buying on this scale by manufacturers as a regular thing. The idea is that if a given factory consumes so much rubber in a year, bought in a few large lots at what the manufacturer considers a fair average price, the result would be the same if the purchases were made month by month, or even oftener, at whatever prices might prevail, while such a policy would obviate the necessity of making large bills. It may be that such a policy may become more favorably regarded if complete success should attend the experiments now under way for the artificial "aging" of rubber by mechanical means—which would remove the most important incentive to keeping rubber long in storage before using it. But these are merely ideas suggested by the condition of the market, and not directly bearing upon it.

The approach of a new crop year naturally puts a stay upon the buying of any remnants of the old crop except in the hand-to-mouth way of those whose requirements are pressing, and holders of any considerable amounts have been disposed for a little while past to make concessions in order to stimulate buying. Whether there would have been any such concessions to record if the rubber-shoe industry had been more active up to date can only be surmised.

The next question of interest relates to the probable size of the forthcoming crop, the one for the season just closed having been the largest on record. In the first place, there is nothing to induce the belief that the crop just finished was stimulated by any temporary causes, not likely to be operative another

year. On the contrary, the output from one or two important tributaries of the Amazon was short, on account of great mortality among the rubber-gatherers—something which, it is hoped, will not be repeated this year. Even if some similar drawback should exist in another part of the Amazon basin, it is to be remembered that the rubber production has increased—with very few exceptions—regularly every year since the Pará trade began, and there is absolutely no reason for supposing that the rule will fail this time. There is, therefore, no reason for supposing that we shall not, within a reasonable time, have cheaper Pará rubber.

Besides the movement from Pará reported in detail this month, the cargo of the *Cearense*, which sailed for New York on June 28, includes 34 tons of rubber.

The trading in Africans and Central American grades has likewise been dull during the month.

Kramrich & Co. (Liverpool) report in a recent circular: "Very interesting and detailed reports have been received from the district from which we received that India-rubber commonly called 'Lagos.' It is pronounced that during the next two years, there will be very little India-rubber coming from that district. The trees have been exhausted to a considerable extent and the opinion is that they cannot recover before the period named. What we receive at present comes from the Yoruba district, far from the interior of the country, and in that district there is at present war, which of course puts many difficulties in the way of the transport of this rubber. Another point to consider is, that although the fact remains that there are extensive forests in the Yoruba district, it is now reported that the rubber-trees are few and far between. The rubber-trees which grow near to the coast are said to be damaged to such an extent that they are practically of no further use."

The statistical position of Pará rubber in New York and elsewhere is as follows—figures expressing tons of 1000 kilograms:

	Fine and Medium.	Coarse.	Totals.	Totals.	Totals.
	1895.	1895.	1895.	1895.	1894.
Stock, May 31.....	236	111	= 337	384	1248
Arrivals, June.....	174	92	= 266	385	403
Aggregating.....	400	203	= 603	766	1651
Deliveries, June.....	195	119	= 314	400	492
Stock, June 30.....	205	84	= 289	366	1159
			1896.	1895.	1894.
Stock in England, June 30.....			1065	1215	1435
Deliveries in England, June.....			265	360	490
Pará receipts, June.....			1030	780	720
Stock in Pará, June 30.....			95	220	305
World's supply June 30 (excluding Caucho)...			1835	2260	3250
Pará receipts since July 1.....			20,975	19,470	19,660

The latest quotations in the New York market are:

PARÁ.				
Upriver, fine, new...	87	@88	Benguela.....	48 @49
Upriver, fine, old....	89	@90	Congo Ball.....	40 @42
Upriver, coarse, new...	57	@58	Cameroon Ball....	38 @39
Upriver, coarse, old..	none here		Flake and Lumps....	@25
Islands, fine, new....	83	@84	Accra Flake.....	18 @20
Islands, fine, old....	none here		Accra Strips.....	51 @53
Islands, coarse, new..	46	@47	Accra Buttons.....	47 @48
Islands, coarse, old..	none here		Lagos Strips.....	43 @44
Caucho (Peruvian) strip	44	@45	Lagos Buttons.....	42 @43
Caucho (Peruvian) sheet	41	@42	Liberian Flake.....	29 @
Caucho (Peruvian) ball	50	@51	Madagascar, pinky...	58 @60
			Madagascar, black...	@43
			Mozambique, red ball...	@...
			Mozambique, white ball...	@...
CENTRALS.			EAST INDIAN.	
Esmeralda, sausage..	49	@50	Assam.....	42 @56
Guayaquil, strip....	35	@41	Borneo.....	26 @41
Nicaragua, scrap....	46	@46½		
Nicaragua, sheet....	none here			
Mangabeira, sheet....	40	@42		
AFRICAN.			GUTTA-PERCHA.	
Thimbles.....	34	@35	Fine grade.....	1.30
Tongues.....	38	@39	Medium.....	1.00
Sierra Leone.....	25	@52	Hard white.....	85
			Lower sorts.....	
			Balata.....	

NEW YORK PRICES FOR JUNE (ISLANDS RUBBER).

	1896.		1895.		1894.	
	Fine.	Coarse.	Fine.	Coarse.	Fine.	Coarse.
First.....	84½	48½	73½	49	65	43
Highest.....	85	48½	74	50	66½	45
Lowest.....	80	44	72	47½	65	42½
Last.....	81	46	72	47½	66	44½

Chicle has been meeting with rather free sales during the month. Just before our last issue the prices prevailing were 31@34 cents, but about June 10 the gum dropped to 29 cents on actual sale in a wholesale way. There was a speedy recovery, however, and at the end of the month 30@31 was quoted for transactions involving 80,000 pounds; followed by reports of 33@35 asked by holders. The supply in New York is quite heavy, but well under control and firmly held. The imports during the month included considerable Campeche gum, which usually contains an excessive amount of moisture.

Sales of scrap rubber have been reported from certain points in the west during the month, at prices as high as 4½@4½ cents, but it has been suggested that the buyers must have been of the weaker class of concerns, who in this, as in other lines, have to pay more on account of their lower credit-ratings. It is certain that consumers, as a class, have not been active of late, and there are reports that dealers have been storing a good deal of scrap. In view of these facts, the outside figures quoted would seem a high price to pay for scrap. Late quotations are

	Per Pound.
Old rubber boots and shoes, carloads.....	4.50@ 4.62½
Do. smaller lots.....	4. @ 4.12½
Rubber carsprings.....	3. @ 3.12½
Rubber hose.....	1. @ 1.12½
Mixed black rubber scrap, per ton.....	14.00@15.00

In regard to the financial situation, Albert B. Beers, broker in India-rubber and commercial paper (No. 58 William street, New York), advises us as follows: "During the past month there has been a fair demand, though somewhat spasmodic, for rubber paper of the best names, and the ruling rates have been 5@5½ per cent. with 6 per cent. quoted for names not so well known, and the latter have not met with ready sale."

THE RUBBER SITUATION AT PARÁ.

Two months ago the activity in rubber at Pará had reached its zenith, and advices from there stated that even a larger business would have been done had the arrivals been large enough to supply the wants of exporters. With the falling-off in receipts, consequent upon the decline of the crop-year, shippers at Pará

manifested considerable solicitude to cover their requirements, while holders seized the opportunity of still further improving the position of rubber, and they succeeded so well that prices continued to advance, until about the end of May. By the close of the first week in June prices for Islands fine had measurably declined, in sympathy with the reports of less pressing requirements from the consuming markets. Of Upriver sorts the supplies at that time were too small to allow of fairly testing the market. Advices under date of June 18 were to the effect that, notwithstanding the small supplies coming in at that time, the market had remained quiet, and holders had been obliged to make concessions to afford the necessary inducement to shippers to do business. Mail advices from R. F. Sears & Co. report the following prices at Pará under the several dates mentioned, in the American currency equivalent for the local quotations per pound:

	May 19.	May 28.	June 8.	June 18.
Islands, fine.....	75c.	76¼c.	73¼c.	70c.
Islands, coarse.....	40c.	39¼c.	36¼c.	34¼c.
Upriver, fine.....	83c.	85½c.	82c.	77½c.
Upriver, coarse.....	56½c.	57½c.	53¼c.	50¼c.

These prices are *f. o. b.*, not including shrinkage, freight, and insurance. The tendency of exchange has been downward during the whole period covered by this report.

IMPORTS FROM PARÁ.

THE receipts of India-rubber direct from Pará and Manáos at the port of New York since our last publication are reported in detail below, the figures referring to pounds:

June 9.—By the steamer *Fluminense*, from Manáos and Pará:

	Fine.	Medium.	Coarse.	Caucho.	Total.
Reimers & Meyer.....	81,800	18,500	51,000	20,200=	171,500
New York Commercial Co	60,400	9,000	36,200	22,200=	127,900
Lawrence Johnson & Co..	.....	.....	.....	29,500=	29,500
Shipton Green.....	8,600	2,500	9,800	700=	21,600
George G. Cowl.....	2,500	700	8,200	.....=	11,400
Kunhardt & Co.....	15,300	5,000	300	.....=	20,600
P. Lima.....	2,000	300	2,500	.....=	4,800
Totals.....	170,600	36,000	108,000	72,600=	387,200

June 20.—By the steamer *Polycarp*, from Manáos and Pará:

	Fine.	Medium.	Coarse.	Caucho.	Total.
New York Commercial Co.	64,500	15,100	24,700	1,700=	106,000
Lawrence Johnson & Co..	8,600	3,600	7,300	17,800=	37,300
Reimers & Meyer.....	1,400	300	16,000	13,800=	31,500
George G. Cowl.....	3,200	700	8,600	.....=	12,500
Otto G. Mayer & Co.....	.....	.....	6,600	.....=	6,600
P. Lima.....	1,100	.....	1,700	.....=	2,800
Total.....	78,800	19,700	64,900	33,300=	196,700

July 1.—By the steamer *Origen*, from Manáos and Pará:

	Fine.	Medium.	Coarse.	Caucho.	Total.
New York Commercial Co.	74,200	12,100	35,700	9,500=	131,500
Reimers & Meyer.....	.....	.....	26,200	50,600=	76,800
C. Ahrenfeldt & Son.....	900	.....	47,500	29,900=	78,300
Lawrence Johnson & Co..	.....	.....	24,500	15,300=	39,800
Otto G. Mayer & Co.....	12,300	6,400	8,600	.....=	27,300
G. Amsinck & Co.....	14,400	5,300	6,000	.....=	25,700
Shipton Green.....	12,500	1,400	6,400	2,100=	22,400
George G. Cowl.....	1,400	400	3,500	.....=	5,300
P. Lima.....	1,800	300	1,500	.....=	3,600
Totals.....	117,500	25,900	159,900	107,400=	410,700

	1896.	1895.
January Imports from Pará.....	2,718,300	2,869,500
February Imports.....	1,945,900	2,274,400
March Imports.....	2,786,300	3,611,700
April Imports.....	1,941,500	2,156,400
May Imports.....	1,527,800	1,651,400
June Imports.....	583,900	1,030,100

PARÁ EXPORTS VIA EUROPE.

June 4.—By the steamer <i>Bohemia</i> , from Havre:	
Otto G. Mayer & Co. (Fine).....	13,500
Otto G. Mayer & Co. (Medium).....	4,000

OTHER NEW YORK ARRIVALS.

BELOW will be found in detail the imports at New York during June, 1896, of India-rubber from Mexico, Central America, and South America, other than Pará grades; also, arrivals at New York of African and East Indian sorts:

CENTRALS.

	POUNDS.
JUNE 1.—By the <i>Adirondack</i> =Greytown:	
A. F. Strout.....	2,500
Andreas & Co.....	2,000
Ellinger Bros.....	1,200
Hoadley & Co.....	800
Total.....	6,500
JUNE 1.—By the <i>Excelsior</i> =New Orleans:	
F. H. Robinson.....	3,000
JUNE 1.—By the <i>Finances</i> =Colon:	
G. Amsinck & Co.....	3,400
Roldan & Van Sickle.....	3,099
Frame, Alston & Co.....	1,900
A. Santos & Co.....	1,350
Dumarest & Co.....	1,075
F. Probst & Co.....	200
J. Menendez & Co.....	400
Total.....	16,424
JUNE 3.—By the <i>Silvia</i> =Cape Gracias:	
Eggers & Heinlein.....	30,000
Samper & Junenex.....	3,500
A. S. Lascelles & Co.....	1,000
A. Lehman & Co.....	1,000
For Liverpool.....	100
Total.....	35,500
JUNE 3.—By the <i>Saratoga</i> =Mexico:	
F. Probst & Co.....	1,000
H. Marquardt & Co.....	500
Total.....	1,500
JUNE 3.—By the <i>Aurania</i> =Liverpool:	
Sgal & Co.....	8,100
JUNE 6.—By the <i>Asiatic Prince</i> =Bahia:	
Reimers & Meyer.....	12,000
JUNE 9.—By the <i>Alleghany</i> =Cartagena:	
D. A. De Lima & Co.....	2,000
JUNE 9.—By the <i>Alliance</i> =Colon:	
A. F. Strout.....	4,000
G. Amsinck & Co.....	2,500
F. Probst & Co.....	1,500
Landman & Kemp.....	1,500
Jacob Balz.....	1,500
Roldan & Van Sickle.....	1,000
W. Loaliza & Co.....	500
H. Marquardt & Co.....	500
Total.....	13,000
JUNE 12.—By the <i>El Sol</i> =New Orleans:	
W. H. Crossman & Bro.....	4,000
JUNE 15.—By the <i>Louisiana</i> =New Orleans:	
Albert T. Morse.....	4,000
JUNE 15.—By the <i>El Rio</i> =New Orleans:	
F. H. Robinson.....	3,000
JUNE 16.—By the <i>Athos</i> =Greytown:	
A. F. Strout.....	4,500
Eggers & Heinlein.....	200
Total.....	4,700
JUNE 17.—By the <i>Seneca</i> =Mexico:	
H. W. Feabody & Co.....	1,000
Whitman Barnes Mfg. Co.....	500
Joseph Ware.....	200
Total.....	1,700
JUNE 22.—By the <i>Advance</i> =Colon:	
G. Amsinck & Co.....	4,545
Hemingway & Brown.....	3,800
Roldan & Van Sickle.....	3,585
Hirzel, Feltman & Co.....	2,600

J. Menendez & Co.....	2,086
Munoz & Esprilla.....	1,400
Andreas & Co.....	1,338
Hoadley & Co.....	1,000
T. G. Lomas.....	790
Frame, Alston & Co.....	600
Dumarest & Co.....	618
A. M. Capen's Sons.....	546
J. Aparicio & Co.....	430
F. Probst & Co.....	183
F. & J. Meyer.....	142
Total.....	23,663
JUNE 23.—By the <i>Alene</i> =Cartagena:	
D. A. De Lima & Co.....	1,500
JUNE 22.—By the <i>Tafua</i> =Laguna:	
Thebaud Bros.....	2,800
JUNE 24.—By the <i>Yumuri</i> =Mexico:	
J. W. Wilson & Co.....	300
H. Marquardt & Co.....	300
Total.....	600
JUNE 25.—By the <i>Castle Eden</i> =Trinidad:	
Kunhardt & Co.....	1,000
Thebaud Bros.....	500
Total.....	1,500
JUNE 30.—By the <i>Adirondack</i> =Greytown:	
A. F. Strout.....	6,500
Andreas & Co.....	2,500
A. N. Rotholz.....	500
Total.....	9,500
Total Centrals for June.....	154,987
Total for May.....	260,326
Total for April.....	175,511
Total for March.....	167,924
Total for February.....	297,782
Total for January.....	339,937

AFRICANS.

	POUNDS.
JUNE 1.—By the <i>Nomadie</i> =Liverpool:	
W. A. Brown & Co.....	15,000
JUNE 2.—By the <i>Southwark</i> =Antwerp:	
George A. Alden & Co.....	30,400
E. F. Spering.....	6,200
Total.....	36,700
JUNE 3.—By the <i>Aurania</i> =Liverpool:	
Sgal & Co.....	10,000
JUNE 4.—By the <i>Bohemia</i> =Hamburg:	
George A. Alden & Co.....	8,500
JUNE 6.—By the <i>Etruria</i> =Liverpool:	
Sgal & Co.....	5,100
W. A. Brown & Co.....	4,000
Total.....	10,100
JUNE 10.—By the <i>Teutonic</i> =Liverpool:	
George A. Alden & Co.....	51,300
Albert T. Morse.....	11,100
Total.....	62,400
JUNE 12.—By the <i>Palatia</i> =Hamburg:	
Reimers & Meyer.....	32,500
Albert T. Morse.....	23,000
Total.....	55,500
JUNE 13.—By the <i>Campania</i> =Liverpool:	
George A. Alden & Co.....	36,000
W. A. Brown & Co.....	1,500
Total.....	37,500
JUNE 19.—By the <i>Patria</i> =Hamburg:	
Sgal & Co.....	5,500
JUNE 19.—By the <i>St. Louis</i> =Southampton:	
Reimers & Meyer.....	900
JUNE 20.—By the <i>Umbria</i> =Liverpool:	
Reimers & Meyer.....	46,300
JUNE 22.—By the <i>Peninsular</i> =Lisbon:	
Otto G. Mayer & Co.....	32,800

George A. Alden & Co.....	22,000
Total.....	54,800
JUNE 24.—By the <i>Lucania</i> =Liverpool:	
George A. Alden & Co.....	11,200
Reimers & Meyer.....	16,000
Sgal & Co.....	2,000
Total.....	29,200
JUNE 27.—By the <i>Prussia</i> =Hamburg:	
Sgal & Co.....	7,000
Albert T. Morse.....	14,000
Total.....	21,000
Total Africans for June.....	393,300
Total for May.....	693,800
Total for April.....	315,300
Total for March.....	775,100
Total for February.....	316,300
Total for January.....	424,900

EAST INDIAN.

	POUNDS.
JUNE 1.—By the <i>Massachusetts</i> =London:	
Sgal & Co.....	7,500
Reimers & Meyer.....	300
Total.....	7,800
JUNE 5.—By the <i>St. Paul</i> =Southampton:	
Reimers & Meyer.....	3,500
JUNE 8.—By the <i>Glenartney</i> =Singapore:	
R. Soltau & Co. (Pontianak).....	58,900
JUNE 15.—By the <i>Bovic</i> =Liverpool:	
George A. Alden & Co.....	9,900
JUNE 16.—By the <i>Hispania</i> =Hamburg:	
R. Soltau & Co.....	4,800
JUNE 19.—By the <i>St. Louis</i> =Southampton:	
Reimers & Meyer.....	400
JUNE 23.—By the <i>Mohawk</i> =London:	
Reimers & Meyer.....	3,000
JUNE 26.—By the <i>St. Paul</i> =Southampton:	
Reimers & Meyer.....	10,000
George A. Alden & Co.....	1,800
Total.....	11,800
JUNE 29.—By the <i>Civic</i> =Liverpool:	
George A. Alden & Co.....	13,300
JUNE 30.—By the <i>Mobile</i> =London:	
Reimers & Meyer.....	17,500
Total East Indian for June.....	130,900
Total for May.....	276,500
Total for April.....	522,400
Total for March.....	310,100
Total for February.....	265,600
Total for January.....	315,400

RECAPITULATION.

	POUNDS.
Pará—direct imports.....	588,900
Pará—via Europe.....	17,600
Centrals.....	154,987
Africans.....	393,300
East Indian.....	130,900
Total at New York for June.....	1,280,587
Total for May.....	3,171,736
Total for April.....	3,271,311
Total for March.....	4,192,224
Total for February.....	2,840,862
Total for January.....	3,823,537

NEW ORLEANS.

	POUNDS.	VALUE.
JUNE.		
Nicaragua.....	41,063	\$17,078

Bi-Sulphide of Carbon. CHLORIDE OF SULPHUR. ALCANNIN PASTE. Specially prepared for Vulcanizing India Rubber. EDWARD R. TAYLOR, Manufacturer, CLEVELAND, O. Mention the India Rubber World when you write. Correspondence Solicited

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